RECEIVED
SEP 2 1891
DEPARTMENT OF
AGRICULTURE

THE AMERICAN FARMER

ESTABLISHED 1819

SAM'L SANDS & SON, PUBLISHERS.
SUBSCRIPTION, $1 A YEAR.

BALTIMORE, MD., SEPTEMBER 1, 1891.

TENTH SERIES
VOL. X.—No. 17.

CLIMATE.

Every section has a climate of its own depending on its elevation above the sea, its prevailing winds, its proximity to larger bodies of water, and to mountain ranges, and lastly to the mechanical structure of its soil whether coarse or fine, whether clay, loam, or sand; for upon these depends its capacity to receive and retain moisture.

All plants and trees have a soil precisely of their own, as well as a temperature in which they flourish best, and live the longest. Artificial appliances, such as manures, and the use of proper instruments of cultivation may do very much to ameliorate both, and may change somewhat the character of the plant or the tree for hardiness, but never can change entirely its habits of growth.

In these days of railroads, and of [illegible] ters, the latter largely increased in number by dredging-dykes, locks, and other artificial contrivances, this question of adaptation of climate and soil has become one of profit and loss almost entirely. The competition is not only between carriers, but between producers, and he who can place his crop on the market the earliest and at the least cost makes the most money.

These facts point to a closer study of climate and soil than has yet been given them, and to a careful study of the different varieties of vegetables, and their adaptation to them.

The range of temperature rather its height, lowness, or equality from one season to another, seems to exert the greatest influence on crops. Thus, beets for sugar, sorghum for sugar, timothy in its best form for hay, are confined to narrow limits of small dimensions. And although each one will grow over a wide area the quality is poor, and more than probably does not compensate its grower, or only with a very small one.

A man without due attention to climatic condition grows a paying crop, and continues to do so for years at a positive loss, incited thereto by the abnormal year that may never return, or never have a distant approximation thereto.

Meteorologists have insisted with tenacity that climate is not to be judged by a few years' observation, not less than twenty being essential at the least, on which to base it.

The Signal Service thinks that Stations 50 miles apart equipped with all the necessary instruments essential for the purpose,—if so, we see at once how far short the whole country is of the data necessary to give the best information of the factor of all others the most important—the climate. A.

P. S. Since the above was written the Digest of Experiment Station Reports for 1888, Part 2, has been received and from the Report of the Pennsylvania Station by W. Trear, Ph. D., and W. H. Caldwell, B. S., we extract the following:

"The predominant natural influence affecting the growth of a crop in any locality is of that climate. This is far more influential than fertility of soil, though there is a certain minimum of that essential to plant life; but it is a matter of common observation that with exceptionably favorable climates condition fine crops may be grown on comparatively infertile soils. Each plant has its own most favorable climate.

The maize plant (Indian corn), with its wide range of territory, has a corresponding range of variation in its variety of types—from the tall, large eared, but very leafy dents of the South to the low, small-eared, but abundant grain-producing flints of the North. Notwithstanding this exceptional power of adaptation to surrounding condition the maize crop is as much influenced by the seasonal variations as any crop that we cultivate. In other words, the condition favorable to the best developement are fixed within a narrow range for any varieties adapted by long culture to the general climate of a given locality."

Recognizing rain as a potent factor of climate, by Kansas Reports from 1874 to 1888 we find that when the rainfall for March and April was the largest, the corn crop was the heaviest. Or taking growing months the yield depended on July rainfall. That when it was under three inches it was lightest. Yet August had its influence, for when July showed a rainfall af 3.75 inches and August 8.5 inches the yield was of the largest. A.

TEMPERATURE, RAINFALL AND WHEAT GROWING.

"The essay of Professor Brewer, "now of the Sheffield Scientific School, "on the cereals to be found in Volume "III, of the tenth census, contains so "many startling facts on the wheat "growth that this article would be an "unsafe guide to wheat growing were "it not to embrace them.

"The great bulk of the wheat of "this country is grown where the "January temperature is below 30° "Fahrenheit, and that of July, when "it ripens between 70° to 80°.

"Ninety-seven per cent. of the crop "is raised where the Spring and Sum-"mer rainfall is between 15 and 30 "inches, and the annual one between "25 and 55 inches.

"Applying these facts to our own "State, we find that at Fallston, in "Harford, assuming 1885 to be a "normal we have a January tempera-"ture of 29.5°, July 74.6°, and an "annual one of 50°.

"At Princess Anne the temperature "at 7 a. m. and 1 p. m. between 23° "and 50° in January, averaged 38.8°; "of July, 75.1°; and of the Spring "and Summer 64.6°; and the annual, "57°.

"The rainfall at Fallston for the "year mentioned above was 50.68 "inches; for the Spring, 8.32 inches; "for the Summer, June and July, 7.35 "inches. That of Somerset is, unfor-"tunately, unknown.

"The bearing of these statistics "will be seen when Cecil grew 471,-"000 bushels of wheat on 30,000 "acres, and Somerset 23,000 on 8,000 "acres in 1879, and Worcester 41,000 "on 6,000."

The above from an article on wheat growing by A. E. Ackworth in a pamphlet published by W. S. Powell & Co. seems to attribute the fact that Cecil county averages over 15 bushels per acre while Worcester made but little over six bushels, to the difference in temperature and rainfall. Now the fact is that with the rainfall and temperature adjusted to a niceity to conform with Mr. Ackworth's notions there would probably be even a greater difference between the two counties. Cecil county makes more wheat per acre than Worcester or Wicomico because her lands are better adapted to wheat, and are better cultivated. Worcester, with less rainfall, would do even worse than she does from her light soils and more rain. Rainfall and temperature statistics are interesting, but we have no control over them and it is all a waste of time to speculate an excuse for poor farming out of a difference in rainfall and temperature of a county where people farm more intelligently. Better stir up the farmers of Somerset and Worcester to improve their lands and raise better crops, and waste no time in guessing about the effects of things we cannot control and to which we must adopt all of cropping. I do not reason that Worcester county or Somerset can be made to average with Cecil in wheat growing, but they can be made to do vastly better than they do, by a systematic effort in soil improvement, and there are lands in both counties that can be made to produce as much wheat as any in Cecil with all the rainfall and temperature thrown in. These everlasting guesses on the weather are tiresome. Let us get down to something practical.

W. F. MASSEY.

Raleigh N. C.

"ROWEN."

Rowen, or second crop clover, frequently produces slobbers or salivation in horses pastured on it. The cause seems not to be known, since on chemical analysis there has been found but little difference in the composition of the two. Our common woolly clover will do the same when in blossom, if horses are kept on it during the hot part of the day. It may be possible that rowen may have the same effect at the same time. If horses are kept on woolly clover late in the evening and early in the morning, only before the sun gets hot, they will experience no ill ef-[illegible] ence between 1st and 2nd crop clover is in their feeding qualities, where with other feed stuffs added it took 10 lbs. of first crop clover to make a pound of flesh, and with the same ingredients substantially it took 54 lbs. rowen to make the same gain.

Analysis failed to show any material difference between the two crops save in fibre. Few are aware of the close relationship in feeding values of the first and second crop clovers to wheat straw. The following analysis, from Bulletin of January, 1891, of the Tennessee Experiment Station puts it in a striking light:

	Clover. 1st Crop.	Clover. 2d Crop.	Wheat. Straw.
Moisture	8.91	8.29	5.57
Crude Ash	7.60	7.12	4.33
Crude Fibre	23.05	31.28	39.54
Ether Extracts, or fats	3.34	3.20	1.61
Nitrogen Free Extract	44.07	37.92	46.45
Albuminoids Nx 6.25	12.94	13.12	13.50

So that, if the wheat straw fibre was put in a condition where the same amount of force would masticate it as thoroughly, a few pounds of added cotton seed meal would make it equal to clover. E.

PREPARING LAND FOR WHEAT.

It is likely that the present and prospective good prices for wheat will lead, this fall, to increased sowing of the winter variety. But more important than a large acreage is thorough and intelligent preparation of the land. Winter wheat, unlike most other crops, wants a compact soil. Its greatest danger is from porous soil absorbing large amounts of water by fall rains, and then destroying the wheat roots by alternate freezing and thawing. So it often

happens that by liberal use of mineral manures, which have themselves a tendency to harden the soil, good wheat crops can be grown after fertility has been exhausted for corn, potatoes and spring grains. Excess of vegetable matter is a disadvantage for winter wheat. In the prairie States the early settlers found that they could not grow wheat after the original sod began to rot. So for years crops of corn were grown, the land all the time becoming harder, until finally it was unreliable for the corn crop. Twelve or thirteen years ago these prairie farmers found that wheat could again be grown. As the vegetable matter decreased in the soil it lost its porosity. It held the roots better, not merely because it was firmer, but because it did not hold so much water to alternately expand and contract.

So far as possible the manure for wheat should be on or very near the surfac. This and compacting the soil just below it secures that spreading growth of the plant both in root and top which is best calculated to endure the winter. It is inevitable that wheat roots should be frozen into the soil during cold weather. If they extend downward, alternate freezing and thawing is sure to break them, as freezing is always downward. If the roots are spread out nearly horizontally then soil and roots rise and fall together, and little injury is done. This applies only to land where there is outlet below to carry away surplus water. Whenever water remains on the surface and freezes even once it snaps the plant just at its junction with the root. We have many times seen places left entirely bare of wheat where puddles of water had frozen over wheat plants. showing just to the line where the water had come. For this reason, where the land is nearly level, then open furrows are needed through the lowest places. In these water will collect while the ground below is frozen and find an outlet beneath if one exists.

One of the important points in prepaing for wheat sowing is to plow early. Time is needed to allow the soil to be compacted before seeding. Early plowing is also necessary in a majority of seasons to make a moist seed bed in which wheat shall germinate quickly. After plowing roll and drag so as to compress the soil, and then cultivate only upon the surface, using implements that press the soil rather than tear it up. The roller should be run over the field after each cultivation. It presses down the lumps into the soil, and if it has any vegetable matter this gets up a germination which softens them. The old rule that lumpy soil brought the best wheat was due to a belief that the lumps protected the leaves from Winter's cold. But we have always found a good growth of top falling down over the roots made a better protection than lumps of clay. All the covering that earth can give is furnished by the drill, which leaves ridges of soil between the rows, ready to fall as crumbltd by the frost. By Spring these ridges are mostly broken down, and if run over by a light harrow the crop of grain and grass or clover seeding will each be greatly benefited.—*American Cultivator.*

THE DIETZ—A FINE NEW WHEAT.

For three years the Dietz, or Dietz-Longberry, has been very successfully grown at the Maryland Agricultural Experiment Station. Last year it far surpassed forty other varieties of wheat grown with it, including all the old favorites. Several lots of seed were sent from the station last fall for trial in different parts of the State, and the reports lately received are all favorable. The Experiment Station has some of this wheat to spare this year, and, although it shows some weevil, it is good seed. The wheat is put up in new sacks, about 150 pounds in a sack, or enough for two acres. These sacks are sold at $3 each, being but little above market price for the best grain. Only one sack is sold to any one person, and the station director prefers to sell to only one or two persons in a neighborhood. The wheat is now ready for shipment. Money may be sent by postal-note or registered letter, and should be accompanied by full shipping directions. Orders will be filled in the order of receipt, until the supply is exhausted. Address Henry E. Alvord, Director, Experiment Station, College Park, Prince George's county, Md.

SCARLET CLOVER, PEACHES, ETC.

For Southern Maryland it will not be too late for the seeding to Italian or Scarlet Clover, orchards of whatever kind, or lands intended for corn next year, and which will have to be dressed with a liberal application of manure of some kind to insure a paying crop. Let me say to such as can use this clover as a green manure in cases as above indicated—and I speak from practical experience—you will save 90 *per cent.* in the cost of fertilization of such lands by this plan or practice, as compared with the *best* commercial manures purchasable in the city of Baltimore. This is on the assumption that, in nine cases out of ten, in the application of commercial manures, the actual needs of both the soil on which it is applied and the crop intended to be grown are not properly understood nor intelligently administered to, thus insuring a direct waste, coupled with excessive cost of chemical manures amounting to not less than 33 per cent. As a simplified, certain and economical method of improving lands such as are too light and thin to admit of a good catch of red clover, the Italian thoroughly and completely meets the case. I shall continue to sow until the 20th of September, plowing under cow peas and seeding the land to this clover, part to be followed with corn and part for hay next year.

Just at this time peach growers of Maryland and Delaware are puzzling their brains to find out "what is the matter with peaches." When unfavorable weather rendered the fruit inferior and the markets were glutted with prematures it was reasonable to hope that, if the weather became settled and the larger and finer varieties were put in market in good condition, good and remunerative prices would be obtained; all of which has transpired except the price part of the crops. Last season was a blank, so far as packing peaches was concerned—the market reported bare of canned peaches—the expectations of growers had reached a rather dangerous altitude, a moderate descent from which would not have been so paralyzing, but to be dropped flat down and kept there thrusts upon the growers a business conundrum that is just simply "given up." An article in the Baltimore *Sun* a few days ago gave as a reason for the low prices the fact that Baltimore had been made the dumping ground for all the worthless and inferior peaches in the country, etc. If that be a fact, the fruit sent to other markets should have sold at good prices, which, however, is not the case.

Is it overproduction or underconsumption? Does a contracted volume of currency affect the prices of peaches as it does the prices of cotton and grains? I do not think that a cause for the depression of prices in the peach market is found in the above, but rather in the unprecedented abundance of all other kinds of fruits—apples, pears, plums, grapes, etc. Every tree and bush in orchard, along roadsides, everywhere, seems taxed in many cases to bear up under the great loads that kind nature has provided.

J. W. KERR.

Denton, Md., Aug. 25.

LIVE STOCK AND DAIRY.

POINTS OF A GOOD BREEDING SOW.

What constitutes a good breeding sow? In addition to the points of a good boar, with a few exceptions, a breeding sow should be selected from a breed apt to fatten readily, and the individuals which have not become deteriorated by injudicious crosses, or by breeding in-and-in. She should be the fairest of the litter, whose dam is a good nurse, a good milker, of mild disposition, and of good fecundity. A sow that has bad points, or blemishes, should be at once rejected, for such animals are apt to transmit these first to their progeny.

A sow must be allowed to farrow two or three times before it is safe to conclude upon her excellence as a breeder. When a young sow brings forth ten or twelve at one farrowing, and is careful of them, and does not think more of gormandizing at the trough, or of running alone in the field, one need not hesitate to estimate her fairly as a good breeder. But, on the contrary, if she brings forth but six or eight indifferent pigs, and roots them about in her nest, and steps on them often, and yields but a small supply of milk, and, above all, is inclined to eat them, she should be fattened at once and slaughtered.

The period of the sow's gestation is generally sixteen weeks. Sometimes sows go eighteen or twenty weeks before they farrow. Sometimes their gestation is from twelve to fourteen weeks. But such litters are apt to be premature, and the pigs commonly need more care to raise them than if the dam had fulfilled her proper time. Young sows that have never been introduced to the boar are sometimes in heat every few days; but after they have raised one or two litters of pigs, if in health, and not too fat, they will generally be in heat about every eighteen or twenty days. Sows of different dispositions exhibit different signs of heat. Some keep up and incessant roaring and a constant smacking of their chops, while those of a mild and peaceable disposition will appear restless, and approach other amimals, or mankind, very fawningly, and follow any person as far as possible. Sometimes, when closely confined, they will wander about the pen, and will have but little appetite for their food. The enlargement and protrusion of the vagina is generally an unmistakable sign. When there are several together the actions are a sure sign.

Generally speaking, there is little difficulty in determining when a sow is in her heat. Before the sow is allowed to pair with the boar, she should have attained a fair size and age. If her frame is well developed at eight or ten months of age, there could be but little objection to her breeding; but, as a general thing, sows should not be allowed to take the boar until they are one year old or more. It is an unwise policy to allow young sows to breed before they have some capacity of chest. It cannot be expected that very young, half-grown sows will be able to bring forth a large number of good-sized, fat, healthy pigs at once. If sows are young and small, they are very apt to have very small and tender pigs. Allowing a young sow to breed while she is growing thriftily checks her growth, weakens her constitution, and her farrowing will be more difficult, and she will be less inclined to exercise that care over her first litter that she would if she were one year old.

When a sow is to pair with the boar, they should be turned into a small yard or sty, where they will not be annoyed by other hogs, and after one good service, or, at the most, two, they should be separated. Permitting them to run together after that is not only pernicious to the male, but often injurious to the female. The first service is generally the most effectual.—*Ohio Farmer.*

ENSILAGE IN THE DAIRY.

Mrs. E. M. Jones, of Brockville, Ont., the far-famed breeder of Jersey cattle, a contingent from whose herd won the silver trophy given in the *Farmer's Advocate* milking trial at the last Provincial Fair held in London, puts her beautiful Channel Islanders to good practical use in the dairy. The output of butter she reports is from 4,000 to 6,000 pounds of butter per year, besides large quantities of milk and cream (sold at the door), amounting during the summer to over $100 per month, and large quantities of milk and cream used in the household. Now, with such an output as this going into a large number of hands, surely some one would observe it if the product were not up to the mark. Mrs. Jones has a right to congratulate herself that she has never yet heard of one complaint. Such a record is not only creditable to the management of the dairy, but we find in it an answer to those who allege, probably in entire ignorance, that feeding ensilage has an injurious effect upon

milk and its products. The testimony given by Mrs. Jones is not based upon the experience of one season, or two, but of ten years, and should, therefore, count for something as against surmise, speculation or prejudice. In the view of Mrs. Jones, based upon actual knowledge, ensilage properly grown and put up is a most valuable and economical food for cattle, even when hay is cheap and roots are grown. Where no roots are grown and hay is dear, ensilage becomes an absolute necessity. In those ten years not a case of sickness, or even indigestion, has resulted from its use, and never once was there an unpleasant taste in milk or butter. Everything gets ensilage except the very smallest calves not yet weaned. Last winter her calves, at the very flush of milking, were given the following feed per day:—35 pounds ensilage, 4 quarts wheat bran, 2 quarts pea meal, 1 quart oil cake meal, ½ bushel roots (carrots and mangolds), 12 pounds hay (probably less). Half the ensilage was fed in the morning early, with half the meal and bran mixed through it, and the other half was fed in the afternoon. Roots are fed at noon, and hay is put into the manger the last thing after milking.

As to growing the corn for ensilage, she prefers to sow it thinly, and let it have plenty of ears just in the glaze, but she has had capital ensilage from thickly sown corn almost without ears.

As to the effect of ensilage upon milk, complaints have been made, we will admit, but investigation would doubtless show, providing nothing else in the management of cows or milk was at fault, that the ensilage was sour, mouldy or half rotfen, from which choice milk could no more be expected than from mouldy hay or rotten roots.—*Farmer's Adrocate.*

THE RAPID DECAY OF SILOS.

The lesson to be learned, we apprehend, from the rather appalling facts in relation to the rapid decay of silos,—especially wooden ones—arrayed by Prof. King, of the Wisconsin Exp. Station, is to build them more substantial, and of materials less lihble to decay, rapidly, than the mass of us have assumed might be used. As the facts impress us it seems that the dampness of the silo keeps the sides moist long after the silage is fed out which once touched the linings; and the whole thing is slowly rotting from this cause even after the food is all gone. If the damp boards could be quickly dried by being stuck up as green lumber is in the lumber yards, of course much. if not all of the rotting would be arrested. But would it pay to have a silo so built, and the lining so treated, by being taken out of the pits, as the ensilago was fed down? We believe it would rather than have it all go to decay in from three to five years. In such a case a permanent half-inch lining on the studs to hold the paper in place, would be enough, and as it would be untouched by silage it would not get moist, or if it did some, it would soon dry out as the silage and thick linings were taken out. The thick linings ought to be a plump 1¼ inches thick after being dressed and matched; and made of very sound lumber, and not more than 8 inches wide.

Whether this would be a more feasible way than that of lining with brick laid up edgewise, in cement,—a method meationed by Prof. H. that strikes us quite favorable—we cannot now tell. It would depend much upon the relative cost of the two kinds of material at the points where used.

But in all this, we see no misgivings on the part of Prof. King in regard to the utility of the silo, notwithstanding the cost that must be incurred to make durable ones. We have learned much through partial failures that we did not contract for. Now let us address ourselves to the work of learning how we can build good, and cheap, too. —*Hoard's Dairyman.*

FLIES IN THE BARN AT MILKING TIME.

When we are tired with our day's work, having hurried to get in the hay before the storm and failed to do it—and the air is sultry with another storm threating, and the flies have all come into the stable to get out of the rain and bite us and the cows, and we stop milking to knock a fiy off the back of our neck, and the cow switches her tail in our face (bringing the tears to our eyes) and puts her foot into the milk pail in her efforts to dislodge a few of the 863,594 flies that have settled upon her head, neck, back, flanks, legs, and other parts of her outside anatomy why, then is the time for us to rise superior to circumstances and often saying gently to the cow, "Soo-oo-o possy," wipe our weeping eyes on a dry part of our shirt sleeve (if we can find a dry part) and whistle softly, "I would not live alway."

But we don't always do that.

And there is some spilled milk, ugly words and perhaps a broken milking stool lying around in the cow stables.

We can restrain our temper under nearly all conceivable circumstances if we try. But we don't.

And therefore dairying doesn,t always pay.

When the flies bother the cow during milking time, throw a light sheet over her.

If the sheet is in the shape of a bag ripped down one side and the closed end put over the back end of the cow, leaving her head out of the other end, she can't switch her tail in our face and one annoyance to us is abolished.

And the cow stands quietly because the flies cannot bite her except on her shanks, and they are pretty tongh and she does not mind the flies on them much.

A ltttle feed at milking time will make a cow forget—in a measure—about the flies.

A dark stable is also helpful.

A combination of all these remedies should prove satisfactory to cow and milker.

But well trained cows give little trouble even when the flies are at their worst.

And the owner of the cows is resdonsible for their training.

"It is never too late to mend," and the badly trained cow can be much improved by gentle treatment.—*National Stockman.*

THE POULTRY YARD.

PREVENT DISEASE.

It is easier to prevent disease than to cure it, and about fifty per cent. cheaper. But I do not advise you to "dose" cheaper. But I do advise you to "dose your fowls continually with something to"keep them well." If your fowls are so "weakly like" that you must be always bracing them up with chicken powders, pastes, pills, elixirs, and tonics of all sorts, better let them die or kill them at once and be done with it. Long experience in the care of poultry has convinced me that proper food, drink, and care, together with strict attention to the sanitary condition of the house and surroundings, will almost, if not quite, banish disease from the poultry yard. I have kept fowls in good health from the time they left the shell until they were killed for market, without administering a drop of medicine of any kind; and I can assure you that if the preventive measures which I recommend are faithfully followed, you will but seldom have occasion to refer to the cure part of this book.

1. Guard against dampness in the poultry house and chicken coop as you would against a pestilence. If the place selected for a poultry house be not well drained naturally, drain it by artificial methods; and always place the coops for the little chicks on the driest spot of ground at your command. In all new poultry houses, and especially those that are built late in the fall, there is a good deal of moisture which comes from the ground, and which, when the house is closed, as it must be in cold weather, shows itself in frost or dampness on the ceiling and walls. Dry, ventilate this natural moisture out of the house before the fowls are put in.

2. See that your poultry houses and chicken coops are well ventilated wtthout exposing the occupants to the danger of sleeping in draughts of air.

3. Keep the poultry house, yards the chicken coops, and everything about, clean. Allow no stagnant water, no decayed or decaying animal or vegetable matter, no filth of any kind, anywhere about the premises. Every morning sprinkle some absorbent, dry earth, land plaster, or coal ashes (never wood ashes,) over the droppings under the roost; and as often as once a weeek remove the droppings from the house. Every spring and fall, and once at least in midsummer, (oftener if some contagious poultry disease is prevalent in your immediate neighborhood), whitewash the inside of the poultry house thoroughly. When the contagious poultry disease is present among your flock, or among those of near neighbors, use some disinfectant daily about the houses, yard,and all places much frequented by the fowls, util all danger is past. One of the best disinfectants is prepared by adding two ounces of carbolic acid to three quarts of water. Another good disinfectant is made by dissolving three pounds of copperas in five gallons of water, and then adding half a pint of crude carbolic acid. Sprinkle the disinfectants about by means of a common watering pot with a fine nozzle.

When the fowls are confined to yards a portion of the yard should be spaded or plowed up every week during warm weather. and even when they run at large the place where they are in the habit of loafing should be purified with an occasional spading and an application of lime or ashes.

Chicken coops should be cleaned and whitewashed whenever a new family of chicks is moved in, and they must be moved and the droppings scraped away often enough to prevent foul odors. After each cleaning sprinkle the ground with a handful of air-slaked lime and then throw on a shovelful of sand, gravel, or dry earth, before the coop is moved back.

4. Keep fowls and chicks free from lice.

5. Avoid overcrowding. If you have only room enough for a dozen fowls don't try to keep over a dozen in that space. Putting "just one more" crowds; it is like sleeping (or trying to) "three in a bed," all are uncomfortable.

6. Feed only fresh, wholesome food, and let it be sufficient in quantity to keep the fowls in good condition. Semi-starvation and over-feeding should alike be avoided. Keep pure water where the fowls can have it at all times, and always keep a supply of gravel, charcoal, and crushed oyster shells, or lime in some shape, where they can help themselves. When you get out of gravel or can't get it, pound your broken crockery up into bits of a suitable size for hens to swallow. They will eat it, and it will take the place of gravel for grinding the food. Some poultry writers advise pounded glass instead of, or in connection with, pounded gravel or crockery, but it is my opinion the less you have to do with pounded glass the better for you and for the hens.

7. Never breed from unhealthy fowls, or from fowls that seem "weakly like;" and especially would I advise you to avoid from breeding from fowls that have seemingly recovered from a severe attack of roup.

Have some building or room apart from the general quarters where sick fowls can be confined and treated away from the rest of the flock. This hospital should be dry, light, have provision for warming, and so ventilated that the supply of outer air can be regulated at will. After this place has been used for fowls afflicted with any contageous disease it should be thoroughly cleaned and disinfected.

9. When strange fowls are brought upon the premises, no matter if they come from the yards of the "best breeders," keep them apart from the rest of the flock until you are sure they are free from disease.

10. When fowls are confined to the limits of the house and a small yard. contrive "ways and means" to make them scratch for exercise. Keep them busy. Satan finds mischief for idle fowls as well as for idle human beings.

11. When fowls mope about, act dumpish, eat but little, look and act half sick, without any apparant cause, first look to the supply of gravel or other grinding material: then if lack of grit be not the trou-

ble, cut down the allowance of food, and once a day, until they are all right again, give Douglass Mixture, a tincture of iron, in the drink; or else use Sheridan's Condition Powder, or some other tonic in the food. —*Our Poultry Doctor, by Fanny Field.*)

HORTICULTURE.

CHESTNUTS FOR PROFIT.

The time will come, and at no distant future, when nuts will be prepared and eaten as food, instead of as luxuries and lunches. Among them the Chestnut will be conspicuous. Other nuts are of a more oily and carbonaceous character, and may not be prepared as food to the same extent as the Chestnut; yet what may not man's ingenuity accomplish in their improvement.

The English Walnut seems to have become acclimated and adapted to a variety of soils and climatic conditions, and although not all hardy, there are some that have withstood the rigors of our most severe winters.

Our native Walnuts are distributed over a large scope of country and seem to flourish in a variety of soils, but are found in greatest perfection on deep black loam. Shellbarks are found on a variety of soils, not generally the richest. Pecans not being indigenous to this section of the country, I am not prepared to prescribe for its cultivation, but being of the order of the Hickory, no doubt it will flourish where the latter does. Filberts of which there are several varieties, being only a large shrub, will flourish in a variety of soils and situations.

The Chestnut. This, in my opinion, is the most valuable of all nuts In addition to our native Chestnuts, there are growing and fruiting in this country, Spanish Italian, French and Japan, as also seedlings from the same, but for sweetness and delicious flavor, our natives stand highest, and were it not for the larger size of the foreign, they would possibly not have come into competition with our natives. At the same time some of those seedlings, possibly impregnated with native pollen, approach in quality very nearly if not altogether our natives, which may be improved so as to combine the quality and hardness of our natives with size and productiveness of some of the foreigners.

Chestnut seedlings are very slow growers until they reach a certain age or size, after which, when properly planted and cared for, they will grow as sure and as well as nursery trees in general. Although the Chestnut seems to become adapted to various soils and situations, they are as a rule indigenous to hills and mountain slopes, upon light soils, such as loam, sand, slate or gravel; in fact, in some cases they flourish on soils that are poorly adapted to cropping when cleaned. Such land might be planted with some of the most valuable Chestnuts, say forty feet apart, and plant Peach trees intermediate, three trees to one Chestnut, these would naturally wear out before interfering much with the nut trees, and, under favorable conditions, will have paid better than general farm crops, and, in addition, the Nuts will have come into bearing, and will henceforth increase in productiveness and value for many years.

We have now a number of seedlings of foreign Nuts of large size, which are very nearly equal in quality with our natives. They are principally seedlings from the Spanish. The largest Chestnuts that I have yet seen were from Japan, but I have not yet tasted a Japan Nut, even grown in this country, that was equal in quality to a few of the Spanish seedlings. The Japan Nuts are more puny growers, and their nuts much inferior in size. A few varieties are claimed to be of large size, but first quality is not claimed for them. In productiveness there is also as much difference in varieties as there is in fruits.

Grafting Sprouts. The great progress in Chestnut culture will be as follows: The hill sides and mountain slopes of Chestnut timber will be cut, and a proper proportion of the sprouts grafted with choice varieties, and all the rest of the sprouts and underbush destroyed. By such method Chestnut groves will be established without planting, which by their rapid growth will make bearing trees in a comparatively short time. Four or five years of practical work of this kind justifies me in making such statement without reserve, and if I am not greatly mistaken the boom in Chestnut culture will be by some such methods.

The Difficulties. To establish a Chestnut grove or orchard by the method just stated is no child's play. To make grafting sprouts a success requires an expert in the business. Then comes the labor of destroying and keeping down all the sprouts and other growth that may interfere with the free growth of the Nut tree, and the removal of brush and rubbish which would invite fires. The proper training of the trees will also be an important matter, as they should be headed in and branched low and spreading, which will be quite an item in the gathering of Nuts. Many tracts of Chestnut timber exist which could be tilled and turned into pasture for sheep, and thus bringing Nut and wool growing under one enterprise, either of which would pay better than common farming.—*H. M. Engle before Pennsylvania Farmers' Institute.*

CONCERNING CURRANTS.

A careful re-examination of my currants shows that the crop will be a moderate one, but it is profitable even when it does not exceed one-third of what the bushes ought to yield. For the best crop the ground must be in good tillage and kept well fed. It is absolutely essential to have good drainage. In wet soil the bushes heave in Winters, and are not healthy, yet the currant must have moisture. It is well to give them mulching after a second hoeing. Many of mine grow in a vineyard, between rows of grapes, from which they get partial shade. These bushes do well.

In pruning I do no more than cut out weak new shoots and old wood that begins to be disbudded or decayed. I have never pinched back bearing shoots. I prefer to have high bushes, removing very low limbs which often bend down with fruit and soil it. The top should be only reasonably opened to the sun.

Of the red varieties I place Versailles and Fay together at the head. The Versailles grows stronger and taller, and bears with me more profusely than Fay. In quality I find no difference. In size the cherry is about identical, but the stems are inclined to be very short; the fruit in bunches, and not, therefore, nearly as profitable as the others.

Red Dutch, Prince Albert and Victoria do not differ very greatly in quality, but the real Red Dutch is much the smallest currant. Prince Albert and Victoria are late and profitable. But the demand is almost universal for "cherry" currants, a name that in market covers Fay and Versailles. For family use some of the later sorts are valuable.

The best in quality of all currants is White Grape; for the table it is delicious. Next to it I place Versailles and Fay. White Dutch is very rich, but smaller and more seedy. Its distinctive feature is transparency, and a golden hue instead of white For family use the White Grape should be planted.

The market demand for white currant is increasing steadily. It is a curious fact that, if scalded before pressing, the whites make a rich red jelly, not as dark as that from red currants, but very handsome. Those who make jelly should call for white currants. Those who eat currants will soon learn to prefer the white.

Black currants I have mostly discarded as unprofitable for market. One grower, with an acre, can supply the demand of a whole county. Lee's Prolific was heralded as a great advance on Black Naples; it is but little better. Crandall, a native fruit is a sprawling grower. It is possible that we shall yet get from this stock; or by crossing an improvement, but the Crandall, as I know it, can make no claim to superiority.

The currant-worm this year came in constant succession from May 12 to July 1. Its feeding capacity is enormous. It is possible to kill vast numbers by examining the leaves for eggs before they hatch. The after-remedy is the well-known hellebore, sprayed or sprinkled on as soon as the worms begin. As many as four applications are often needed to keep down the pests. Guinea-hens eat the worms, and the currants, too. If the bushes are defoliated one year the buds for the next year are debilitated, and a short crop will be produced.

The demand for currants has steadily increased with the demand for all other small fruits. After the cherry it is the most wholesome fruit for dyspeptics. It ships well, and it may remain long on the bushes. Unlike the strawberry, and especially the raspberries, it never hurries us The opening price in market is from eight to ten cents a pound, wholesale. It seldom drops below five. I have this year given up baskets and send all my currants out in crates. It will become the only method shortly. In the small boxes they are not crushed, and if picked wet they get dry, while in large baskets they mold.—*Garden.*

SAVING CANTALOUPE SEED.

Unless it is to get a start, cantaloupe seed should be saved at home, for when this is done we know exactly what we have got. That is, if we know the rules to follow in selecting seed.

Cantaloupes are so easily spoilt by being planted near kindred plants, such as cucumbers, gourds, squashes and other kinds of cantaloupes, and the qualities of the melon from which seed are saved are so apt to be transmitted, that it is a matter of the utmost importance, if we want No. 1 cantaloupes, that each seed melon be carefully examined before cut, and that it be as carefully sampled afterwards to see that the quality is all right.

As a rule, accidental qualities or defects in plants, caused by the want of moisture or poverty of soil, or other causes, are not transmitted, but the cantaloupe is an exception to this rule. The least variation from the true type in the cantaloupe, no matter what is the cause, is almost certain to be transmitted.

By selecting the smallest melons for seed we can soon reduce a kind of cantaloupes in size, and by selecting the largest we can increase the size, and it is the same with every other quality found in the cantaloupe. We can make one cantaloupe sweet or tasteless, large or small, rough or smooth, with deep ridges or shallow ridges, with white flesh or yellow flesh, to grow near the hill or on the tips of the vines, simply by selecting seed melons possessing the qualities wanted.

It is a general complaint in the last few years among lovers of cantaloupes that they are not good any more, that they are tasteless, and the complaint is a just one. Cantaloupes have been rapidly deteriorating in quality for the last fifteen years, and the cause is want of care in the selection of seed. Every cantaloupe that fully developes before it ripens should be a good one, promising all the excellent qualities for which cantaloupes are prized, and it would be, if the seed cantaloupes possessed such quantities. There seems to be but one object in view with growers of cantaloupes and that is earliness. All other qualities are lost sight of, and we have cantaloupes three and four weeks earlier than we had them fifteen years ago, but the qualities not looked after are gone.

When cantaloupes are grown expressly for seed no selections are made, but seed are saved from all, good bad and indifferent.

If anyone wants to grow cantaloupes expressly for seed and mean to save seed from none but those having the best qualities, it would be impossible to supply the demand for cantaloupe seed, and they could not be sold under three or four dollars a pound. The only way for the country to be supplied with cantaloupes, and that will produce good, edible melons, is for every grower to save seed from melons grown on his own farm, and until this is done the market will be full of melons looking like cantaloupes, but having none of the qualities that should be found in a good cantaloupe. There are good kinds of cantaloupes in the country, but those who have them do not buy their seed but select seed

from the best melons consumed at home. New kinds of cantaloupes originate, just as new kinds of watermelons originate, by variation. Cantaloupes are prone to vary, and the seed from a varying melon comes true.—*Home and Farm.*

TO GROW LARGE ONIONS AND LARGE CROPS.

A correspondent of *Farm and Fireside* gives the following method of doing this.

Make plant-boxes of uniform size, say 12x20 inches and 2½ or 3 inches deep. For making them, the thin lumber which enters into the make of many dry-goods boxes answers very well. For good drainage, instead of a board bottom, nail on narrow strips one tenth of an inch apart. When the time comes for sowing—between the middle of July and middle of September, according to climate—fill a box with well-prepared earth. Carfully strike off surplus filling with a straight-edge so as the box may just be even, level full. Press this earth down one quarter of an inch. Do this with a quarter-inch board cut to fit loosely in inside of the box and nailed to a board one half inch larger all around. Scatter one quarter of an ounce of seed of any of the approved mammoth varieties evenly over the compressed earth, or put it in drills, the drills only one inch apart. Again fill the box with earth and use the straight-edge carefully (and the knack of doing it is to move the straight-edge back and forth endways while striking forward) and then every seed will be covered just one quarter of an inch deep. Then press this last filling down one quarter of an inch to compact the earth to the seeds all alike. Now fill up the box with clean-washed sand, sifted through a meal-sieve, and use straight-edge without further pressing. The sand is a mulch, and prevents crusting of the earth and the plants from doubling up and raising in the crust in broken sections.

This manner of planting places all the seed on an equal start, but at the end of their fall growth, one, two, or possibly three of the sets in every ten will be decidedly small, and quite evidently so because of feeble vital power in the seed, and they can be rejected, for there can be but little hope, if planted they would produce marketable onions. If thus one set in ten is poor, and we spend equal time in its cultivation with the good sets, it is as the loss of a hundred bushels on a thousand, and if two such sets, two hundred bushels.

Next, plant the box out in the open garden, down in mellow earth till the top is level with the surrounding soil. Make the earth under and around the box almost soaking wet. Then on the sand of the box sprinkle a quart of water, and afterward every evening a pint, more or less—more in dry, hot weather and less or none in cool, damp weather. It is not absolutely necessary, but it will be well for the first seven days, except when sprinkling, to keep one or two thicknesses of white cloth (old sheet) spread on the sand and held there by weights on the outside earth. With favorable weather the plants will all be up by or on the ninth day. From the eighth to the twelfth or fifteenth day, if the weather is hot, shade the young plants with a board so fixed it will turn off rain. Then, as a rule, let nature take its course, except to regulate the supply of water. Too much water promotes growth of tops instead of bottoms. Use just enough water to keep the tops in fair color, and less as the time approaches for going into winter quarters.

When the sets are ripe—tops dead or nearly so—take the boxes into a cool place under shelter where the earth will dry out, then into a cellar not warm and muggy nor freezing cold, though a moderate freeze does no hurt. If the sets are only partially ripe when freezing weather is near at hand, pursue a similar course, only first take them into the house to finish ripening. But if the sets show no sign of ripening, then preserve them in the green state, as cabbage plants from autumn-sown seed, by putting the boxes into cold-frames. In the absence of cold-frames we may confidently do as well, if not better, by placing the boxes end to end in a shallow trench, or on top of the ground, and in addition may include the boxes of ripe, dry sets, putting these on top of a board that they may keep dry, and then cover the boxes of green and ripe sets with two wide boards nailed together like a V-shaped pig-trough upside down. At the ends fill and pack in earth around a tube (it may be a joint of four-inch stove-pipe) laid high and level with the inner end under the arch of the inverted trough. To serve for early winter, close the tubes and cover the structure moderately with straw and some earth, and when hard winter sets in add more straw or straw and straw. The plants will be entirely secure against sudden freezes and thaws. Occasionally open the tubes for a few minutes for cold air to blow through. With a thermometer in hand we can reach to the inside air and get the temperature.

By such a structure for preserving green sets, no boxes need be used; simply sow the seed in long, narrow beds where the plants are to be wintered. But no tests of sets can be made without boxes. Testing, however would be no particular object to those who want to raise onions only for home consumption

To make a good test of the sets, their roots must not be disturbed by pulling up weeds and grass. Therefore, cook the earth. For only a few boxes cook in a pot on the stove. Add no water, but keep the pot closely covered. In a few minutes the pot will be full of scalding steam, and in half an hour kill all grass and seeds, and insects and their eggs. The writer commenced this cooking a few years ago to avoid disturbance of flower seeds of slow germination, and now cooks in a pan made as for boiling sap.

That there may be no difference in the size of the sets from rich and poor streaks of earth, it must be intimately mixed by screening, and lastly by sifting through a meal-sieve. For onion sets, select only moderately rich, mellow loam and sand as makes good corn soil. When sowing the seed, let the earth be just so moist as not to clog a meal-sieve in sifting. A box of plants will produce from eight to twelve bushels Large growers will make boxes about 2x6 feet, with side pieces projecting at the ends six inches as handles for two men—weight of box filled, about 220 pounds.

For planting, take the sets out of the earth, first soaked till soft so as to break no rootlets. Reject the poor, and plant the good ones four inches apart in rows twelve inches apart.

CHEAP FLOWER PIT.

Many fine flower plants may be wintered over to help adorn our gardens another year, by keeping them in a simple, well-constructed pit without artifical heat. Hortense Dudley describes such a pit in Country Gentlemen as follows; In order to get its full share of winter sunshine, the pit had best be arranged for a southeastern exposure. The lowest side should be facing the southeast. Sash and glass are the principal items of expense. A pit that will accomodate quite a number of hardy plants—as well as many boxes of slips, sufficient for all ordinary purposees—measures on the inside, finshed, six, by eight, being four feet deep in front and six feet in rear, the back wall being two feet higher than the front, in order to give sufficieut slant for carrying off rain water. The floors and walls should be as nearly impervious to water as possible, a brick or stone wall plastered with hydraulic cement would be preferred, but as not all of us can afford that, we usually have a pen built of hewn logs, lined with thick plank on the inside, just as we construct our ice houses, taking care to place the pit on an elevated site that drains itself naturally, to prevent its holding water. One long row of shelves should be made running lengthwise of the pit, and facing its lower side. The shelves should be so built that when placed in the pit each lower one will project from eight to ten inches farther than the next upper one, which is ten or twelve inches higher; so placed, with a vacant place left on each shelf near the wall, no other steps will be needed for going down into the pit. It is well to make the shelves of thick oak plank, stout and strong, a substantial support being added in the center, for boxes of earth are heavy. When finishing off the pit, the curbing in front should be one foot higher than the surrounding surface of the ground as an additional protection agsinst the water seeping through. The clay taken from the pit should be heaped against the wall on every side and tramped smoothly down while damp, when it will become almost solid and caarry off the water in every direction. Over the surface of the clay, however to add to the beauty of the mound, a top-dressing of earth may be spread and covered with blue-grass sod, or some pretty running vine, as Ground Ivy or Fox Ivy. The sash for a pit of the dimensions given is most conveniently made in three seperate pieces, each having no connection with the others, but fitting into a slide of its own, so that any one may be lowered and raised at will, or removed entirely. Ordinary window glass, of extra thickness, when it can be had, answers the purpose quite well. The sash described above takes eight by ten. I would not have it much deeper though, as the plants placed lowest down will be likely to mould, and if the curbing and sash do not fit tightly around the top, the plants will be frosted. In districts visted by heavy snow or hail storms, it would be well to provide light wooden doors as a protection to the glass; these, during severe cold weather, may be kept on for twenty-four hours at a time without injury to the plants.—*Popular Gardening.*

PLAN FOR A SOUTHERN INVESTMENT

I will call to the attention of some of the readers of your paper, that has long taken an active interest in rural advancement, that there are many thousands of acres of land in Mississippi and Alabama that were once fertile. Old farms can be again made fertile and profitable, and I have been urged to get up a joint stock company for such improvement. I have arranged a plan that will be both profitable and pleasant. I can buy suitable lands at $1 to $6 per acre—we will say at an average of $3 per acre. It will cost about, say, $3 per acre to fence and arrange the buildings. We will take with us a carload of young Short-horns, cows, heifers and bulls, as a nucleus of a herd and to grade up the common cattle; a young stallion and a few choice mares, and some 30 young Berkshire swine. We would buy 100 cows and heifers in calf and calves at their sides; 100 yearling steers, 200 two-year-old steers, 200 three-year-old steers; farming implements, and employ three hired men for the first year. We would fence off a field of 200 acres and have it farmed on the shares so as to have corn fodder and other feed for the animals during the short and mild winter. We sell the 200 three-year-old steers and 100 porkers the first winter. We would then annually have 200 steers and some 200 fat porkers each succeeding winter. The capital must cover all cost and first year's expenses, and this would be divided into shares of $100 each, which must be sold at par, and all paid in, for no assessments will be made and no debts contracted.

The annual sales would be distributed in pro rata dividends, so in about four years each stockholder would get all of his investment back. The farm and stock with all of the implements would be worth fully three times the cost. First year the three men's wages and the manager's satary would be a part of the investment; in after years his salary and two men's wages would come out of the annual sales. As one manager could superintend all, we would advise another 1,000 acres, two men, with same number of common cattle and a small herd of Herefords to grade up with; then also another 1,000 with the Black Polled cattle, and as the others, but under the care of one manager.

JOHN S. GOE.

Fayette Co., Pa.

The American Farmer.

"O FORTUNATOS NIMIUM SI. SI BONA NORINT AGRICOLAS." - - - - - - *Virg.*

PUBLISHED ON THE 1ST AND 15TH OF EVERY MONTH,

By SAMUEL SANDS AND SON,

At the N. W. Corner Baltimore and North Streets,

(Sign of the Golden Plow,)

BALTIMORE, MD.

WM. B. SANDS, Editor and Publisher.

SUBSCRIPTION:

$1.00 a year, in advance. Anyone who sends a club of not less than five, will receive an extra copy FREE. To subscribers in Baltimore city, including postage, $1.25.

ADVERTISING RATES:

	1 Time.	1 Mo.	2 Mo.	3 Mo.	6 Mo.	12 Mo.
1 Inch, 12 lines	$1.25	$2.25	$4.00	$5.50	$9.00	$15.00

Liberal reductions will be made on larger advertisements. Advertisements to remain on outside pages subject to special contract. Transient advertisements payable in advance—all others quarterly. Advertisements should reach us by the 12th and 27th of the month, to secure insertion in the succeeding issue.

☞At the office of THE AMERICAN FARMER are located the offices of the following organizations, each of which its proprietor, Wm. B. Sands, is Secretary:

Maryland State Immigration Society.
Maryland State Farmers' Association.
Maryland Horticultural Society.
Maryland Dairymen's Association.
Maryland State Grange, P. of H.

Entered at the Postoffice, Baltimore, Md., as Second-Class Matter.

BALTIMORE SEPTEMBER 1, 1891.

THE BALTIMORE COUNTY FAIR.

This event, which is a very popular and extensive one, comes off this year September 8 to 11, and all who can avail of the opportunity should not fail to visit it. The great abundance of fine stock in the county makes its display an imposing one, and the variety and extent of the territory which is laid under tribute renders all departments full and interesting. The attendance is always large, the county being a populous one, while the fair grounds are so convenient to this city that great numbers are drawn from it. The display this year promises to be unusually attractive in all its sections. Many races and other diversions give variety and entertainment to those seeking relaxation.

THE STATE WEATHER SERVICE TO BE EXTENDED.

Dr. C. P. Cronk, meteorologist in charge of the Maryland weather bureau, said, in an interview reported for the *Sun*, that Maryland has a greater diversity of climate than almost any other State. It ranges from the marine climate of the Eastern Shore to the continental and then the mountainous climate of the Western part. There has hitherto been no means for studying the climate. The Maryland weather bureau, established last May, is the youngest and smallest in the United States, and before its establishment the observations were few and unsystematic. We hope to establish as soon as possible about fifty local weather bureaus at various points throughout the State to act in co-operation with us, and about the same number of display stations, where signal flags will be hoisted, warning farmers and seamen of the state of the weather.

It is fast becoming a matter of direct importance to farmers of Maryland and Delaware to know what temperature may be expected at any given time for any given month. The annual mean is far from affording a correct basis, since the range may be very great between the early morning and afternoon temperatures, especially in late fall and early spring seasons, that relate to the ripening or starting of various crops. There is, too, a close connection between the dew point and rainfall. When it is known that a fall of 10 or 12° in the dew point generally precedes a rain, it will enable the farmer and trucker to save fruit from rotting by picking, and to take advantage of favorable indications to save and ship crops.

On Thursday I sent circular letters to a number of editors of county papers asking their co-operation, and have already received favorable replies. We hope to establish at least fifty of these display stations, mostly in country towns and places where farmers are apt to congregate. The signals will be flags, hoisted every morning to indicate the weather for the next twenty-four hours. There are now five flags in the set.

No. 1, white flag, six feet square, indicates clear or fair weather.

No. 2, blue flag, six feet square, indicates rain or snow.

No. 3, a black triangular flag, six feet at the base and six feet in length, always refers to temperature. When placed above the white or blue flags it indicates warmer weather, and when placed below them it indicates colder weather. When not displayed the indications are that the temperature will remain stationary, or that the change in temperature will not vary 5° from the temperature of the same hour of the preceding day.

No. 4, white flag, with black square in centre, six feet square, indicates the approach of a sudden and decided fall in temperature, This signal is usually ordered at least twenty-four hours in advance of the cold wave. It is not displayed unless a temperature of 45°, or less, is expected.

A new flag has just been added to the system of weather signals to indicate local rains. It is six feet square and consists of two horizontal parallel bars of white a and blue, white uppermost.

These display stations are distinct from the observation stations, of which we expect to establish about fifty at various points over the State. Twenty dollars is enough for all the instruments necessary to fit up a station. To voluntary observers, not nearer together than fifty miles, the government will lend instruments. At the regular observing stations, observations are taken three times daily of exposed temperature, wet bulb, dew point, relative humidity, highest and lowest temperature, rain or snowfall, direction of the wind and state of the weather. Monthly reports are made to the central station, which are there reduced to summaries. The central station also sends monthly reports to them, and they also get the Monthly Weather Review, an extensive periodical published by the government, which is probably the best periodical on the subject published in the world. They receive information by telegraph from Washington every morning, and special telegrams on special occasions, as when a frost or cold wave or storm may be anticipated. The necessary instruments for a signal station are a rain gauge, a wind vane, a maximum thermometer for registering the highest temperature, a minimum thermometer for registering the lowest temperature, an exposed and a wet bulb thermometer, and a sheter for the thermometers.

Those places which already have observation stations are Baltimore, Barren Creek Springs, Cumberland, Frederick, Jewell, Leonardtown, McDonogh, Mount St. Mary's, Summit Hall, Woodstock College, Upper Marlboro', Bryantown, Princess Anne. We want as many stations as possible. I think that excellent results would be obtained if all educational institutions had observation stations. At Mount St. Mary's College, Woodstock College and the McDonogh School they have been already established. It is especially desired to have stations in Hagerstown, Westminster, Belair, Elkton, Chestertown, Centreville, Easton, East New Market, Snow Hill, Salisbury, Oakland, in Maryland, and Wilmington, Dover and Georgetown, in Delaware.

The United States weather bureau was transfered on July 1 from the War Department to the Agricultural Department. The new chief is Prof. Mark W. Harrington, of Ann Arbor, Mich. He was the director of the astronomical observatory there, and editor of the American Meteorological Journal.

The Maryland weather bureau was organized last May under the joint auspices of the Johns Hopkins University, the Maryland Agricultural College and the United States weather bureau.

The quarters occupied by the bureau are in the physical laboratory of Johns Hopkins University, Monument street and Linden avenue. The roof of the building is used for the exposure of instruments. The officers of the bureau are Prof. Wm. B. Clark, of the Johns Hopkins University, director; Prof. Milton Whitney, of the Maryland Agricultural College, secretary and treasurer, and Dr. C. P. Cronk, of the United States weather bureau, meteorologist in charge.

MARYLAND WEATHER SERVICE.

IN CO-OPERATION WITH UNITED STATES WEATHER BUREAU.

JOHN HOPKINS UNIVERSITY BALTIMORE, Aug. 28.—The following weather crop bulletin for Maryland is for the week ended August 28:

Northern Central Maryland.—The rainfall for the week throughout this portion of the State was about twice the normal and though farm work was somewhat delayed in consequence thereof, corn and other growing crops, with the exception of potatoes, are reported as having been benefited. Potatoes were slightly injured by the heavy rainfall of the 24th and 25th. The temperature for the past seven days was slightly above the average and beneficial to vegetation in general. The amount of sunshine was small, but nearly sufficient for the need of growing plants.

Southern Maryland.—The rainfall was heavy and corn, tobacco, vegetables and fruit suffered much injury in many portions of this section. About the average temperature for the season prevailed and with a beneficial effect upon corn and tobacco, especially where growing upon clay loams. There was less than the usual amount of sunshine, and though grass and corn did not suffer materially from the absence of it, considerable injury resulted to fruits, and to peaches in particular.

Eastern Maryland.—Ripe fruits were injured by the heavy rainfall of the week and growing crops were not improved by it. The average temperature which prevailed was beneficial to vegetation in general, but the lack of the usual amount of sunshine has retarded to some extent the proper growth of corn and vegetables, and in conjunction with the rain, has been deleterious in its effect upon fruit.

Western Maryland.—Though the rainfall for the week was much above the normal for that period (a total of 2.33 inches falling at Cumberland,) it was fairly distributed and is reported as being injurious to a very slight degree, if at all. The average temperatare which has prevailed has been beneficial in its effect upon crops, and the absence of the usual amount of sunshine has not resulted unfavorably to vegetation.

HORSE AND MULE CENSUS.

A bulletin made public by the census office gives statistics of horses, mules and asses on farms of three or more acres, but not including this kind of stock on ranges, kept on holdings less than three acres, or in cities and vilages. The figures of the tables show that in the States and Territories there were on haud June 1, 1890, 14,976,017 horses. 2,246,936 mules and 40,100 asses; that in 1889 there were foaled 1,814,404 horses, 157,105 mules and 7,967 asses; that theae were sold in the same year 1,309,577 horses, 320,995 mules and 7,271 asses, and that there died from all causes 765,211 horses, mules and asses during the same period. The increase of horses from 1880 to 1890 is shown to be 44.59 per cent. as against 44.95 per cent. between 1870 and 1780, and 14.34 per cent. between 1860 and 1870. The increase of mules from 1880 to 1890 was 26.66 per cent. between 1870 and 1880 the increase was 61.08 per cent., while from 1860 to 1870 there was a decrease of 2.24. Of the aggregate number of horses and mules in the whole country June 1, 1890, 86.95 per cent. were horses, 13.05 were mules. The North Atlantic group of States had the smallest proportion of mules, 2.41 per cent., while the South Atlantic group had the largest proportion, 32.04 per cent., against 27.96 per cent of hores.

HOME DEPARTMENT.

IN MEMORIAM — SAMUEL SANDS.

"Until the evening going out to reap,
Then like an infant sinking into sleep."

Simple, yet solid; modest, yet reliant;
In love a little child, in faith a giant;
Versed in academic ways and rules,
But with a wisdom wider than the schools;
A great warm heart, a poised and steady mind,
Earnest and zealous ever for his kind;
Tireless to toil for noble, loving ends,
Safest of teachers, friendliest of friends;
Having no wish to rise
Higher than humble work or sacrifice;
Brave, generous, patient, full of holy fire,
The Master's glory his desire;
Loving, tender, true, the ground he trod
Bloomed rich with beauty for the eye of God;
Until the evening going out to reap,
Then like an infant sinking into sleep;
Life was with him to labor and adore,
And death to him was life forevermore.

A STRANGER.

The What-To-Do Club.

I REGRET to notice the continued absence of the membees of the Home Department Club, as their several experiences were of interest. The wish expressed by Amanda A. that she might meet the members in her well-appointed home was most inviting. I felt it was restful and good to be there. This is the season of care and needed rest; even the thought of exertion seems tiring, yet I feel we are better off for a little extra effort for others' sake, resulting as it always does in future good to ourselves, for if we sacrifice to interest and please others we in turn must feel happier for our unselfishness. I have been troubled and anxious of late, for a time vitally so. By constant effort, I have appeared brave and hopeful, and in caring for others I lost much of the sorrow that oppressed me. It is well for us not to let our own and others' lives become burdened; we are only partly alive if we lose hope and courage. Disappointment, sickness, loss of friends may be hard to bear; they are often a part of our lot on earth, but there is good in them if only rightly and patiently borne. They should bring us nearer the Master and reveal to us his gracious love, develop in us fortitude, sympathy, a chastened spirit and other wholesome benefits. Sorrow often makes our experience, teaching us to feel properly for ourselves and others. We must feel deeply before we can think rightly. It is not in the tempest and storm of passions that we can reflect, but afterwards, when the waters have gone over our souls. Reflection is the result of feeling, from that absorbing compassion for one's self springs a deeper sympathy for others. These are commonplace truths, I know, which have often been a thousand times better expressed. Formerly I heard them, read them, now I *feel* them, and feeling, write them as if they were something new. We do ourselves great harm, if, instead of trying to profit by our trials, we give ourselves over to hopeless repining.

I ask not that for me the plan
Of good and ill be set aside,
But that the common lot of man
Be nobly borne and glorified.

Youth, joy, wealth—Fate, I give thee these;
Leave faith and hope till life is past;
And leave my heart's best impulses
Fresh and unfailing to the last.

A STRANGER.

Through some mishap or other I have not received a copy of the AMERICAN FARMER since the one dated July 1st, and though it has only been a few months a regular vistor, I have learned to watch for its coming, and look forward with much pleasure to my semi-monthly chats with the sister. Many of them, I expect, at this season of the year, are away from home and are finding in new scences and rest from every day duties renewed health and vigor. Let me beg of them not to forget the Home Department. Keep its columns bright with notes from pens of the interesting places, and people you see, and of the good times in general you are having. Many of the farmer's wives find it impossibie to get away from home, and are over-run with work, cooking for harvest hands, and trying to take care of the rapidly maturing fruits and vegetables. Imagine the disappointment of such an one sitting down paper in hand to read, and rest for half an hour; she turns to the Home Department and finds it deserted without even so much as "Good by I'm off" We are told. "He that watereth shall be watered also himself" and in contributing to the happiness of others we add to our own; perhaps I have less of an excuse than any of you for not sending in my mite. I need hardly tell you I am not expecting to take a trip to Europe this season, or even spend a few weeks at Cape May, or in the Adirondacks. Homesteader-wives seldom do, nor am I over burdened with the work of putting up preserves and pickles. I would not care if I had a little more of that kind of work to do, but I am not without hope that in the near future we will have an abundance of all such things. This year has been a great improvement over the past. "Uncle Sam," too, has taken hold and is seeing what can be done about giving us "more wet." On a bluff about eight miles south of us workmen are erecting a tower, one of a line to be built every fifteen or twenty miles north and south; just what use the towers are going to be I don't know, but I expect from them balloons or some explosives of some kind will be set off. I see by the papers the experiments recently made in Texas were very successful; ten hours after the explosions black clouds gathered and a heavy rain fell that lasted six hours. Sitting in my cool sod house with a good breeze blowing through the open window from the north, Ican hardly believe my eyes as I glance at the thermometer and see it registers a hundred in the shade, I feel the heat at once, and decide it is too warm to write any longer. Perhaps you wish I had come to that conclusion long ago. LOUISA FUNSTON.

Gove Co. Kan.

I HAD thought this summer to almost live out-of-doors, in a pretty rest-house, but alas! we plan and know so little of what the future may have in store for us. I have not realized my heart's desire, so I submit the plan to your readers, hoping some one will execute, for there is nothing more restful than the blessed out-of-doors, under a pretty shelter. The four walls of a house dominate us, and we are not as vigorous and helpful under this species of bondage. I have often written to you on this subject of "Rest." To me it is a vital one, and I am never weary of trying to make others feel they have too little rest, too little sleep, too many hours to sow and reap.

Size for rest-house, 10 feet square; front corner posts, 4 by 4; top plate, 2 by 3; peaked roof, sheathing boards, covered with tarred paper. The two sides finshed in strips two inches wide. Back and front with banister rail three feet from the ground. The space between ground and banister rail stripped diagonally and from twelve to fifteen inches' from top plate, stripped the same way; door in one end. Awning in front, if desired, or on sunny side. The whole whitewashed; vines of any kind was planted. An arbor for grapes in front. A STRANGER.

Sand Hills, Augusta Ga.

CHANGE is said to be the spice of life. It certainly is very handy in settling bills, and a moving power. Feeling satisfied (after doing my part in planting and cultivating, while the sun and rain were doing their part,) my garden would be a horticultural success, I looked over thr list of summer resorts to find where all the nice people go and decided that the proper place was the sea shore—when one could listen to the breakers roar, see and exhibit the human forms divine, and take in the fat of the land and the fruit thereof.

The change from bossing garden working to tipping waiters, was great (financially.) Knowing that fun is something expensive, I went for all there was in my style and have been lucky enough to get back to the grange all right and fully appreciate my home, be it ever so homely, which reminded me of a lady friend that went west, she had a nice little home and family in Maryland, but having heard and read so much about the great West, decided to try it mostly for the change. She was immense on gardening and was told the ground there did not require any manure but she used it to try its effect and found that it did not hurt the groud a bit, and that she could grow just as good truck in Maryland, and all there was in the west was the change that most all were after and the sharpest got the worst of it. She managed to keep enough to move back and is now conteneed and happy. I left considerable of my change on the sea shore and am now looking to my garden to produce more, but the prospects are not as brilliant as they might be.—SALLY LUNN.

HOURS OF EASE.

THE "FAMILY" AND MODERN CIVILIZATION.

The family is the first unit of social organization, and it remains the vital center of that group of institutions which constitute the State. The health of the whole social life depends primarily upon the health of the Family; as an institution. As the physical conditioh of the body depends upon the condition of each bodily organ, so the health of the social organism is dependent upon the health of each social institution; but as in the body some organs are more closely related to its vitality than others, so in the social organism the Family is more closely related to its very life than any other institution—not only because life is most influenced at its source, but also because all through the formatlve period it is not the church, nor the school, but the home which determines character.

If we study closely the relation of the different institutions to the Family in any community, we shall see this truth illustrated. Take the "Family" and the "School." We shall see that it is where the *homes* are doing the best work that the schools reach the highest standard. Said a discouraged teacher: "If the parents do *their* part, how much easier and pleasanter would *our* work become; but, as it is, much of our time must be spend in doing police duty, because of lack of habits of obedience and self-control in the pupils. It is not only a foundation of the best elements of moral character which the school needs for its best work, but there is an *intellectual* work which the parents should do in harmonious co-operation with the teachers. Study the work of the Church and you will find the same truth—the need of the co-operation of the Home.

There are hosts of young people who are indifferent as to religious matters, drifting hither and thither, because of lack of spiritual devlopement and religious training in the home. The churches, having thus too much work thrown upon them, are obliged to work spasmodoically and call in help to rouse these young people to formative purposes. The homes are the natural feeders of the Church. If the spiritual work of the Family were done as it should be, the great majority of the young people from Christian homes would enter the Church before the dangerous years of early maturity. We can never go on, as a nation, to the heights of a spiritual civilization until the Family does this spiritual work.

The tendency in modern life has been for so many years toward the multiplying of organizations, and the result has been to lessen the interest in the Family and weaken the sense of parental responsibility. But not any nor all other organizations can take the place or do the Family. That, as a nation, with all our education privileges and our religious freedom, we have not reached a higher moral character—that we have so much to be ashamed of in our political life, our trade morals, our social scandals, the records of our divorce cotrts—is due in great part to the moral and spiritual inactivity of the Family. The warden of Sing Sing Prison, when asked what he considered the gratest factor in production of the criminal character, said; "The lack of training in obedience in the home."

Here then lies one of the weaknesses of modern life. The Family is failing to meet the demands upon it of a higher and more complex civilization. It is not enough that the Family shonld do as good work as it ever did; it must do *better* work, and to a certain extent *different* work, as civilization progresses, if it

is to hold its God-appointed place. So only can there be a perfect balance of institutional activities and perfect health in the body politic.

The social organism develops by constant readjustment to constant changes in social conditions. The social conditions have very greatly changed in the last fifty years, and the readjustment of our institutiont to these changes have caused great ferment along certain lines. We hear endless discussions over the new education and the new thelogy, but little thought is giving as yet to new ideals for the home life, and there must surely be an awakening in this direction if we are to preserve the Family and secure the sacreness of the marriage tie. Tne enemies of the family life are many, and they are on the alert to point out its inefficienty. The very conditions of modern life are at war with the privacy and unity of home life, and all the while the men and women of the future have a right to demand of us the best preparation possible for the wonderful age in which they are to live.

What is the true work of the Family amid the new conditions of modren life? What are the new ideals which should govern the home? These are the questions of the educated women of the present to ponder and discuss. Let the college graduate with her wider range of intellectual vision and her greater mental power, bring herself into touch with practical life at this point, and help to form those ideals for which we wait. Of all the studies of the higher educaton, the one of the most vital interest to women, and through women to the State, is the study of sociology. When we have solved the complex problems of modern home life, then, and not till then, shall we be ready to help solve the problems of the State. The ideal home must precede the ideal State, and when we have reached the ideal relationship of the sexas in the home, the expansion of these will produce their ideal relationship in the State. It is no use for us to try to work out the problem the other way. All history shows this reciprocal relationship between the Family and the State. Tyranny in the Roman home meant tyranny in the State, and the absence of all authority and obedience in the family life means lawlessness in the State. For every great problem now before the State there is a corresponding problem of family life.

There are multitudes of women to-day who are weary of so much clamor about their rights, but who are earnestly eager to do their duties. These fill the thrill of new life-forces, and with prohetic instinct are wating for the revelation which shall give direction to their inspired energies. They are sure that no revelation can be from God which does not show them how to be better sisters and daughters, better wives and mothers.

If the higher education may help us to penetrate the deeper meanings of our coumon relationships, then shall we indeed to lay the true sociological foundation of the Republic of God.—*Maria Upham Drake in the Christiam Union.*

HINTS AND HELPS.

RECIPES FROM GOOD HOUSEKEEPING.

SMOTHERED CHICKEN.—Cut the chickens open in the back for broiling. Salt, and place them in a dripping pan with enough water to cover the bottom. Cook in a quick oven, basting frequently with butter, and adding more water if it is needed. Take up the chickens and make the gravy by stirring in the thickening and allowing it to boil up once. Cut up the giblets, add pepper and a plentiful supply of butter, and pour a little gravy over the fowls. Put the rest in a gravy bowl. Served with hot waffles. This is a dish fit for a king.

FRICASSEED CHICKEN.—Cut the chickens into pieces. Put into a pot with cold water to cover. Boil slowly for an hour for ordinary chicken—twice as long for an old one. Thicken the gravy and ponr it over the chickens. The water should be talted when the chickens are put on, sepper added after they are dished. Add butter if the chickens are young, with a little thyme if it is liked.

CHICKEN POTPIE.—Prepare and cook as above. Fifteen minutes before serving, drop into the pot pieces of ordinary biscuit dough, rolled thinner than for biscuits, and cut into squares. If put in immediately after mixing, and cooked without removing the cover, they will be light. Thicken the gravy and pour over the chickens and dumplings.

BAKED TOMATOES.—To bake fresh tomatoes, take large, smooth fruit, cut a slice from the top of each, and take out the seeds, and most of the pulp. Mix this, together with half its bulk of bread crumbs, and add butter, pepper, salt and sugar to taste; work all well together, and then stuff the skins with the mixtnre. Replace the tops, put the tomatoes together in a baking dish, and bake (covered) for three-quarters of an hour in a moderate oven. Then uncover, let them brown a few moments, and serve. The French way of baking tomatces is to scald and peel them, and put them into a buttered dish, with salt and pepper. Then bake in a brisk oven, basting with melted butter, and pour over them before sending to the table a cupful of tomato sauce that has been stewed thick on the top of the stove.

POTATO CROQUETTES.—Six potatoes of fair size were pared, boiled, and mashed till light and smooth, making about a pint and a half when mashed. To the mashed potatoes were added a saltspoonful of pepper, a generous teaspoonful of salt, a heaping tablespoonful of butter, a gill of hot milk and the whites of two eggs, beaten to a froth. The mixture was beaten until very light, and set away to cool. When cold, it was shaped in the hands in the form of small cylinders, and rolled on a board over a thin layer of dried and sifted crumbs. When all were shaped in this manner, the yolks of the two eggs from which the whites were taken and put into the soup plate, with two tablespoonfuls of milk aud a half teaspoonful of salt, and beaten thoroughly with a fork. The croquettes were covered with this egg and then rolled over a thick bed of crumbs. Great care was taken to have every part of the croquette covered with the egg and then with the crumbs. They were placed on a platter, care being taken not to have them touch each other. At serving time they were placed in a frying basket, again apart from one another. The basket was lowered gently into a kettle of fat, which was so hot that a blue smoke rose from the center. The croquettes were browed in one minute and a half, and the basket was lifted from the fat by placing a large spoon under the handle. It was set on a large plate, and after a few moments its croquettes were lifted from it and placed on a piece of brown paper in a warm pan. After a minute or two they were ready to be arranged on a napkin on a warm platter. There were so many croquettes that they had to be fried in two lots.

NOTHINGS.

BARBECUED MEAT.—Grease cold meat all over. Broil. Put in oven fifteen minutes. Serve with salad dressing.

BREAD SAUCE FOR FANCY MEATS.—A pint of bread crumbs; water two-thirds pint; onions, red pepper, nutmeg. boil last, add crumbs; Try some brown; add. Sift crumbs before using.

CUTLETS WITH VEGETABLES.—Cold meat cut round on one end, wiih a point at the other. Beat. Boil or fry. Put paper frill around point, Have a mound of vegetables; peas, greens, etc. or of dressing. Arrange cutlets around this, each standing on broad end with little frills meeting at top.

SAVORY PYRAMIDS.—These delicious little dainties may be made with any little odd pieces of beef, mutton, veal, pork, no matter how small; cut off fat, bones and gristle to form into gravies. Chop meat into paste; a cold fried egg may be chopped and pounded into bread crumbs, season. Roll meat into pyramids about two inches high and two inches at base with crumbs and a little gravy. Roll each in dry crumbs and bake until brown.

RISSOLES.—Roil meat paste into tiny balls, cover with scraps of pastry smooth and round. Boil in fat, drain in napkin, serve on another.

ROLLED FISH OR MEAT.—Spread with crumbs and sauce, roll each small piece and secure with cord or skeever. Bake with two-spoonfuls of water. Cover with sheet of greased paper.

ITEMS.—Keep tart cases, cakes, croutons in tight receptacles; sifted flour kept at hand; some prepared ready to use at a moment; browned flour; butter browned, with flour; take strainings of buttermilk; caramel dried peel; apples, etc. These and more keep time a flying.

Use scrapings of your cake pan for making lady fingers. Pour into paper cornucopia, cut point off. Have strips of paper cut size of fingers; when baked grease. Pour dough on in one narrow strip; bake on top of oven. When done, but not brown, take out and put on damp cloth to remove paper. Stick together.

MEAT A LA CREOLE.—Cut in pieces, size of tripe pieces. Season with onion, red pepper, tomato.

SEED BOXES—Make of old boards, the thinner the better. Long five inch boxes to fill into windows between sash and curtain.

2. Make hot-bed against sunny side of house. Line doors with paper.

S. D.

HYGIENE.

DANGERS IN OUR HOMES.

It is a popular belief that, throughout their existence in this world, men and women are doomed to continually combat dirt, disease and the devil. Giants in theology have long taught the people how is satanic majesty is to be met and routed, only, however, to reapper with renewed energy for a fresh conflict. The fathers in medicine have taught how disease is to be met, but, for three thousand years, disease has stalked at midday among the children of men, slaying alike the aged man and the innocent babe at its mother's breast. It is only recently that intelligent men have begun to understand the causes of disease and the conditions which make it possible for disease to exist and to spread; and still more recently they have secured the knowledge which will, in time, banish many common diseases altogether. In past centuries the plague, the cholera, the smallpox and other diseases swept over Europe repeatedly, destroying people by the thousand and even by the million, in some cases leaving not more than one-tenth of the people alive; in other cases whole districts were abandoned and became the abode of wild beasts. But these diseases, with scurvy and typhus fever (jail fever), are nearly unknown now in civilizeed communities, and we are just on the point of banishing in like manner the scourges of childhood, diphtheria, scarlet fever, measles and whooping cough, and the plagues of manhood, pulmonary consumption and typhoid fever. We believe that we have knowledge enough today to enable us to live and avoid the greater portion of the diseases to which the human family is subject, and we fully believe the old philosopher, John Locke, that "prevention is better than cure, and far cheaper."

It is in and about our homes that the most of the causes of disease will be found, and because most of us have failed to detect them they are called "Hidden Causes of Disease." Let us begin our search in the cellar and proceed through the house to the garret.

As a rule the most dangerous place in an American house is the cellar. It is often damp, and too often not thoroughly clean. Damp, foul odors day by day arise from the unventilated and dark cellar, aud pass to every room in the house, carrying the seeds of rheumatism, diphtheria, pneumonia, colds, consumption, etc., to the inmates. Many families who wonder why it is that the children are sick could discover the reason by going into the cellar. Dr. R. C. Kedzie, of the Michigan Agricultural College, thus speaks:

"Go down into the cellar and examine the foundations of life; see whether the cellar is dry and well ventilated, and the air sweet and wholesome; that no vegetables and useless rubbish of any kind are left

to rot in your cellar; or do you find all kinds of things going to decay, the cellar wet, the walls slimy, mould spreading over everything, and a close, stifling odor pervading the air of your cellar? If these inanimate things could give voice to their warning, what a sound would startle our ears in hundreds of cellars in our state: 'Here lie in ambush diphtheria and membranous croup, the destroyers of childhood, and typhoid fever, that strikes at all ages, here lurk the seeds of consumption to bring forth the slow but sure harvest of lamentation and woe!' 'For the stones shall cry out of the wall and the beam out of the timbers shall answer it.' But though these voiceless things speak no word of warning, they hang out the flag of danger; the spotted mould and fungus attacking the timbers of your cellar show that destructive tendencies are at work. Why, man, death is gnawing the very sills of your house, and shall he spare these tender morsels, your children? These damp, musty, mouldy cellars are the seed beds of disease. Do not hope to preserve health over such a charnel house. Do not leave vegetables to rot in your cellar to spread rottenness through all your house. The wet cellar foretells wet eyes upstairs. Drain it, and underdrain the surrounding soil, so that your cellar shall always be dry. Drive out all mustiness and mould by ventilation and by abundant use of whitewash. Make the air of your cellar at all tims sweet and wholesome, because much of this air will find its way into the rooms above. But if you neglect all of these things, and the Angel of Death spreads his dark wings over your household, do not charge the effects of your nastiness and laziness to a very mysterious Providence. 'A prudent man forseeth the evil and hideth himself; but the foolish pass on and are punished.' The cellar should be as dry, as clean, as sweet as any room upstairs. It should be whitewashed, not once a year, but if at all musty once a month. Open all its windows and ventilate completely.

You may wonder how a dirty cellar effects the dwellers in the room above. It is because the disease germs, which are in the air of the cellar, pass with that air into the rooms above. There are fires lighted in winter, the cold air on the outside presses into the cellar, and the air their presses up into the house. There is no such thing as keeping foul air in the cellar. It will go throughout the house. The only thing to do in the matter is to keep the cellar clean and dry, else fevers, malaria, croup and consumption may be expected in the rooms above.

From the cellar, we pass up to the kitchen, where we examine the drain and sewage pipes. These are often inlets for poisonous gases. Even dish-water will coat a drain with foul substances, which will decompose and send into the house most dangerous gases. Every drain pipe should be trapped; but that is not enough. Proper disinfectants should be dissolved in hot water, and at least once a week poured into the drains. The best substance that I know of for this purpose is green vitriol, a pound to a gallon of hot water. In towns and cities connected with a general system of sewage, everything that is foul and death bearing may enter through the sewage pipes. Here, especially, we may look for typhoid fever and diphtheria, as also malaria.

There are other elements of danger in the kitchen. The particles of food which adhere to the vessels, pans, dishcloths, etc., decompose and form breeding spots for disease. Decaying matter may cause disease in at least two different ways. 1. The putrid matter, through chemical changes, may develop substances which are actively poisonous to the human system; and 2. In this putrid matter may be formed the natural food elements for disease germs, bacteria, and low forms of life, which, introduced into the human body, have the power of multiplying there and of producing very destructive results. All who have had any experience at this point know how necessary it is to be constantly on the guard here. These disease germs form their homes in the filth, get into our food and often produce the most serious results. A poison called tyrotoxicon was discovered a few years ago by Dr. V. C. Vaughan in cheese, and it is now known that cheese and ice cream poisoning are caused by this substance, and Dr. Vaughan thinks it is the sole cause of true cholera infantum, and possibly also of the milk sickness of new countries.

Garbage and slops from the kitchen when thrown around the yard in slovenly manner, decompose and emit gases poisonous to man, and form at the same time breeding beds for poisonous germs. In rainy seasons a large portion of the filth often finds its way into the well or cistern. Kitchen slops and garbage are doubtless often the cause of malaria, diarrhœa, dysentery and more serious troubles in country and village homes. In towns the garbage should be removed daily if possible, and in all cases before it has time to decompose. The pipes which carry off the slops from the kitchen should be securely trapped that no foul gases enter the house through them. In country places, villages, etc., the slops from the kitchen should be carried at least 100 feet from the house and the well, in glazed pipes, securely cemented at the joints, and can then be used to fertilize the garden plot or the fruit trees. The solid garbage, as parings, etc., may be thrown into a pit in the garden and kept covered with earth until decomposed, when it may be applied to the soil.—*National Baptist.*

OUR BOYS AND GIRLS

THE OCEAN'S FLOOR.

The whole ocean is now mapped out for us. The report of the exposition sent out from London for the purpose of ocean surveys has recently been published. Nearly four years were given to the examination of the currents and the floors of the four great oceans. The Atlantic, we are told, if drained, would be a vast plain with a mountain range in the middle running parallel with our coast. Another range crosses it from Newfoundland to Ireland, on the top of which lies the submarine cable. The ocean is thus divided into three great basins, no longer "unfathomed depths." The tops of these sea mountains are two miles below a sailing ship, and the basins, according to Reclus, almost five miles. These mountains are whitened for thousands of miles by a tiny cream species of shell, lying as thickly on their sides as frost crystals on a snowbank. The deepest parts are red in color, heaped with volcanic masses. Through the black, motionless waters of these abysses move gigantic, abnormal creatures never seen in upper currents.

There is an old legend coming down to us from the first ages of the world on which these scientific deep-sea soundings cast a curious light. Plato and Solon record the tradition, ancient then, of a country in the western seas where flourished the first civilization of mankind, which, by volcanic action, was submerged and lost. The same story is told by the Central Americans, who still celebrate in the fast of Izcall the frightful catacysm which destroyed a continent loaded with populous cities. Dr. Bourbourg and other eminent archæologists assert that this lost continent extended from the coast of Africa to near the West Indies. The shape of a plateau discovered in surveying the ocean's floor corresponds with this theory exactly. We may yet find the lost Atlantis.—*St. Louis Republic.*

THE MECHANIC'S CAPITAL.

The mechanic is sometimes looked upon as a man without capital. Sometimes he looks upon himself in this light. This is all a mistake. The man who earns $1,000 a year has not only capital, but in these times of low interest, he has considerable capital.

The manufacturer and the merchant aim to increase their capital by a judicious handling of present means. The merchant does, or should, try to increase his in the same way. Knowledge to the mechanic is capital, because it enables him to command more for his services. If he posesses simply the skill of the workman, he can make that skill earn him a certain sum per year, which sum is the exponent of the capital he has invested in his business. If, to the skill of the workman, he adds to the knowledge of the man who thinks beyond present purposes, he earns more; or, in other words, he increases his capital. The young machinist, for instance, who learns machine drawing, is morally certain at some time to find use for it where it will stand exactly to him as the money to the capitalist stands to its posessor; although this is hardly a fair statement, because he will at once find use for it. When the man who earned $1,000 a year by virtue of his skill as a workman, adds such a knowledge of his business as to earn $2,000, he has as surely doubled his capital as the man who has twice as much money to invest in his business as he formerly had.

It is earnestly advised that every apprentice to the machine business shall do a little calculation for himself on this subject, always remembering the capital, which is the result of skill and knowledge, is seldom at a discount and never lost. It is just at this time in their lives when habits are formed that to some extent determine the working capital with which they are to go through life.—*The Tradesman.*

THE FORGETFUL PUPIL.

There once lived a man who possessed such a lovely garden that it was his greatest pleasure to watch its growth, as leaf and flower and tree daily seemed to unfold to brighter bloom. One morning, as he was taking his usual stroll through the well-kept paths, he was surprised to find that many of the blossoms were picked to pieces. It was not long before he traced the mischief to a little bird, which he managed to capture and was about to kill, when it exclaimed:

"Please do not kill me. I am only a wee tiny bird. My flesh is too little to satisfy you. Set me free, and I shall teach you something that will be of much use to you."

"I would like to put an end to you," replied the man, "for you are spoiling my garden; but as I am always glad to learn something useful, I shall set you free." And he opened his hand to give the bird more air.

"Attention!" cried the bird. "Here are three mottoes which should guide you through life: Do not cry over spilt milk; do not desire what is unattainable; do not believe what is impossible."

The man was satisfied with the advice and let the bird escape, but it had scarcely regained its liberty, when, from a high tree opposite, it exclaimad:

"What a silly man! The idea of letting me escape! If you only knew what you have lost!"

"What have I lost?" the man asked, angrily.

"Why, if you had killed me, you would have found inside of me a huge pearl as large as a goose's egg, and you would have been a wealthy man forever."

"Dear little bird," the man said, in his kindest tones, "sweet little bird, I will not harm you. Come down to me, and I will treat you as if you were my own child, and give you fruit and flowers all day long."

But the bird replied: "What a silly man, to forget so soon the advice I gave you! I told you not to cry over spilt milk, and here you are worrying over what has happened. I urged you not to desire the unattainable, and now you wish to capture me again. And, finally, I bade you not to believe what is impossible, and here you are imagining that I have a huge pearl inside of me, when a goose's egg is larger than my whole body. You ought to learn your lessons better in the future," added the bird, as it flew far away.

The French government has adopted a policy in regard to abandoned mines that may have far-reaching consequences. It has ordered that the sixty-three mines in France which have been abandoned are to be transferred to any person willing to start them again. Of these mines, twenty-one are iron ore mines, nine are coal, eleven are lignite and the remainder consist of copper, lead and zinc mines.

BRIEF NEWS SUMMARY.

FOREIGN.—The damage done by a recent cyclone which swept over the Island of Martinique was $10,000,000, and 378 people lost their lives—Severe earthquake shocks were felt in Portugal and Italy—Owing to scarcity of grain, distilleries in Germany are reducing production—The grain crops in Ireland, Sweden and Denmark have been partially destroyed by incessant rains—Queen Victoria and President Carnot exchanged cordial messages on the occasion of the naval review at Portsmouth—Postmaster-General Raikes, of England, is dead—Five citizens of Nicaragua, two of them ex-Presidents, were arrested by order of President Sacasa, conducted to the border, and warned that if they ever returned they would be shot. Citizens attempted a rescue and a fight ensued, in which the chief of police and six soldiers were killed and fifty citizens shot—The Chamber of Commerce at Barcelona, Spain, has protested against the treaty with the United States as injurious to Spain's trade with the West Indies—The party of Balmaceda, the President of Chili, has been defeated, and Valparaiso and Santiago have surrendered to the revolutionists.

GENERAL.—Hon. Redfield Proctor has been tendered the United States senatorship from Vermont, left vacant by the resignation of Hon. Geo. F. Edmunds—The Farmers' State Alliance, which was in session at Dallas, Tex., for nearly a week, adjourned. Aside from adopting the Ocala platform and re-affirming the sub-treasury scheme, it took no other step in a political way—In the Missouri Alliance Convention at Perule, Wednesday, August 26, the sub-treasury people carried the day by a vote of 80 to 29.—Twenty persons were killed, nine seriously injured, and twenty badly bruised by a railroad accident near Statesville, N. C., on the Western North Carolina Road—Vermont celebrated the centennial of her admission into the Union and dedication of the battle monument at Bennington, the President being in attendance—Inter-State Commerce Commissioner Walter L. Bragg died—The situation at the Peoria railroad yards grows desperate—A terrible accident occurred in New York, in which were killed 51 persons, two houses on Park Place collapsing—The census shows that the assessed valuation of the absolute wealth of the United States is $24,249,589,804—All of the northwestern part of Faulk county, South Dakota, was burned over Friday night by a terrible fire twenty miles wide and extending from Faulkton fifty miles northwest. As far as the eye could reach the sky was lit up with burning stacks of hay and grain. The farmers are ruined.

MARYLAND.—The Republican State Convention of Maryland met at Ocean City Thursday, and nominated William J. Vannort, of Kent county, for Governor; John McDonald, of Montgomery, for comptroller; George M. Sharp, of Baltimore city, for attorney-general, and Enoch B. Abell, of St. Mary's county, for clerk of Court of Appeals—The men and officers of the Maryland State fishery force were sworn in as members of a battalion of naval militia reserves, and reviewed by Governor Jackson and Lieutenant Colby, of the navy—Mayor Davidson notified Mr. John E. Hurst and others that he will not accept a nomination for a second term as Mayor—Mr. James F. Barbour, of Washington, has purchased a portion of Mr. George Alfred Townsend's "Gapland" tract, on South Mountain, Md., and erect upon it a handsome summer residence—Judge Harlan on Saturday appointed receivers to wind up the affairs of the Progressive Endowment League—Mr. Thomas Rawlings, one of the oldest inhabitants of Montgomery county, died at his home, near Dawsonville, on Thursday. He was eighty-eight years old—Col. John Douglas Freeman died at his home, in St. Mary's county, August 20, aged 91 years. He was always prominent in public affairs and had filled a number of offices.—M. V. Richards, land immigrant agent of the Baltimore and Ohio Railroad, is contemplating the purchase of 4,856 acres of land at Beltsville, Prince George's county, for a Bohemian settlement.

BETHEL CLASSICAL AND MILITARY ACADEMY.

$95 half session. Prepares for Business, Univ. of Va. and West Point. Catalogue address

Maj. A. G. SMITH,
Bethel Academy, Va.

STATE AND DISTRICT FAIRS, 1891.

Alabama, Birmingham, Oct. 20-31.
American Institute, New York, Sept. 30-Nov. 2.
California, Sacramento, Sept. 7-19.
Colorado, Pueblo, Sept. 24-30.
Connecticut, Meriden, Sept. 15-18.
Delaware, Dover, Sept. 21-25.
Georgia, Macon, Oct. 21-29.
Illinois, Peoria, Sept. 28-Oct. 2.
Fat Stock, Chicago, Nov. 11-21.
Indiana, Indianapolis, Sept. 21-26.
Iowa, Des Moines, Aug. 28-Sept. 4.
Kansas, Topeka, Sept. 11-19.
Louisiana, Shreveport, Nov. 3-7.
Maine, Lewiston, Sept. 7-11.
Maryland, Bel Air, Oct. 13-16.
Massachusetts Horticultural, Boston, Sept. 15-17.
Michigan, Lansing, Sept. 7-11.
Minnesota, Hamline, Sept. 7-12.
Nebraska, Lincoln, Sept. 4-11.
New Brunswick, St. John, Sept. 23-Oct. 3.
New England, Worcester, Mass., Sept. 1-4.
New Jersey, Waverly, Sept. 21-25.
New Mexico, Albuquerque, Sept. 14-19.
New York Inter-State, Sept. 1-9.
New York, Syracuse, Sept. 10-17.
New York Western, Rochester, Sept. 21-25
Ohio, Columbus, Sept. 14-19.
Oregon, Salem, Sept. 14-19.
Pennsylvania, Bethlehem, Sept. 21-26.
Rhode Island, Providence, Sept. 21-25.
St. Louis, St. Louis, Oct. 5-10.
South Carolina, Columbia, Nov. 9-13.
South Dakota, Sioux Falls, Sept. 21-25.
Southern Expos'n, Montgomery, Ala., Oct. 28-Nov. 11.
Southern States, Raleigh, N. C., Oct. 1-Dec. 1.
Texas, Dallas, Oct. 17-Nov. 1.
Toronto Industrial, Sept. 7-19.
Vermont, Burlington, Sept. 1-4.
West Virginia, Wheeling, Sept. 7 11.
Wisconsin, Milwaukee, Sept. 14-18.
Wyoming, Cheyenne, Sept. 14-19.

MARYLAND COUNTY FAIRS.

Baltimore, Timonium, Sept. 8-11.
Frederick, Frederick, Oct. 13-16.
Harford, Bel Air, Oct. 13-16.
Montgomery, Rockville, Sept. 2-4.
Talbot, Easton, Sept. 1-4.
Washington, Hagerstown, Oct. 13-16.

27th Annual Opening.

Parents having sons and daughters to educate should give careful consideration to the announcement made in our advertising columns by Prof. W. H. Sadler, President of Sadler's Bryant & Stratton Business College, of Baltimore, Md. This old established and high standard institution is now entering upon its 27th year of usefulness and commands not only the patronage and confidence of the people of Baltimore, but of the entire South.

BALTIMORE MARKETS—Aug. 31.

BREADSTUFFS.

Flour—Dull at quotations: Western Family $4 50, Howard St. Super $4 50, Balto. High Grade Family $6 00

Wheat—Southern slow, receipts being largely of inferior lots. Quotations range 98a1 00 for Fultz and 1 00a1 08 for longberry. Western firm, No. 2 red spot selling at 1 08½, September 1 08¾, October 1 08½.

Corn—Southern quiet, white selling at 67a69 cents, yellow 68a70 cents. Western steady, mixed spot selling at 68 cents, September 69 cents.

Rye—Easy. We quote No. 2 97a99 cents, good to prime, 90a95, common to fair 80a89.

Oats—In good inquiry and steady. We quote ungraded Southern and Pennsylvania 36a40, do. mixed 37a38 cents.

Hay and Straw—Old hay at a premium over new and all quiet. The quotations as follows: Choice timothy 14 50a15 00; good to prime 14 00a $14 50; fair to good mixed 12 50a13 50; common and inferior 10 00a$11 00. Clover 9 00a$10 00. Straw was quiet. Quotations: Rye in carloads 12 50a13 50 for large bales in sheaves, blocks 9 00a$10 00; Wheat blocks 800a$9 00, and Oat blocks 10 00a$11 00 per ton. At Scales—Hay—Timothy 12a$14, new Hay 9a$12; Clover Hay 10a$11 per ton. Straw—Wheat $9, Rye 11a$13, Oat 9 per ton. Ear corn 3 50a$3 75 per bbl.

Mill Feed—Quiet. The quotations were: Western Bran, light, 12a13 lbs, 18 00a$19 00, do. medium, 14a16 lbs, 17 00a$18 00; heavy, over 16 lbs, 16 00a$17 00, and Middlings 16a$17, with Spring brand ranging $1 per ton under these figures, all on track. City Mills Middlings $19 per ton, delivered.

Provisions—Steady and firm. We quote: Sugar-pickled Shoulders 7¼ cents; smoked sugar-cured Shoulders 8¼ cents; sugar-cured Breasts 10½ cents; canvased and uncanvased Hams, small averages, 12½ cents; large averages 12 cents per lb. Mess Pork, old, $12.00, and do new $13.50 per bbl. Lard, best refined, pure, 8¼ cents per lb.

Butter—Very firm at quotations: Fancy creamery jobbing at 23 cents, do good to choice creamery 19a20 cents per lb. Imitation creamery 17a18 cents per lb. Fancy ladle-packed 14a15 cents; prime to choice do 13a14 cents per lb. Store-packed 11a14 cents, and creamery Prints 22 cents per lb.

Cheese—Steady. Fancy full cream, New York State, 50 to 60 lbs., 10a10¼ cents; choice full cream 9¾a10 cents; New York flats, 30 to 35 lbs size. 10¼a10¾ cents per lb; 20 lbs size 10¾a10½ cents per lb.

Eggs—Firm. Fresh laid Eggs 18 cents per dozen.

Poultry—Demand good at quotations. Spring Chickens, all sizes, each 15 cents per lb; old Hens 12 cents per lb, and old Roosters 25a30 cents apiece. Old Ducks 8a9 cents per lb; spring Ducks 10a11 cents per lb, 2.50a$3.50 per dozen.

Canned Goods—Quiet and steady. Two-pound Tomatoes 85 cents; three-pound do 85 cents; two-pound Green Corn 80a85 cents; two-pound String Beans 55 cents; Bartlett Pears $1.60; Marrowfat Peas 1.10a$1.15; early June Peas 1.15a$1.25.

Tobacco—Demand active and receipts large. We quote Maryland inferior and frosted 1.00a$1.50; sound common 2a$3; good do 4a$5; middling 6a$8; good to fine red 9a$11; fancy 12a$13; upper country 3a$10; ground leaves 1a$9,

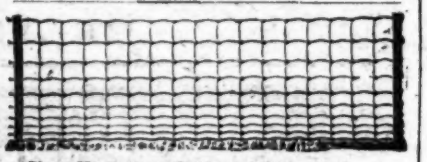
Wool—Dull. We quote: Unwashed extra choice and light 23a24 cents; average lots 21a23; do merino 16a18; tub washed, fair to choice, 30a32; pulled 25a28.

LIVE STOCK.

Beef Cattle—Rather dull, prices ranging as follows: Best Beeves 4.75a$5.00, those generally rated first quality 4.37½a$4.75, medium or good fair quality 3.12½a$4.00, and ordinary thin Steers, Oxen and Cows 2.00a$2.75 per 100 lbs.

Sheep and Lambs—Trade fair for Lambs dull for Sheep. We quote sheep at 3¾a4¼ cts per lb net and Lambs 4a5¼ cts per lb gross.

Swine—Dull. We quote: Nearby Hogs at 7a7½ and Western range at 7½a7¾.



Since Noah turned them out to grase
The animals with ease—
Like legislators with a pass—
Could go just where they pleased.

But now the Coiled Spring Act's in force,
Reform is in the air,
And Honorable animals, of course,
Will STAY (or pay their fare.)

THE PAGE WOVEN WIRE FENCE CO.,
Adrian, Mich.

Baltimore County Fair

TIMONIUM,

9 miles from Baltimore, on Northern Central R R. Special Trains from Baltimore, 8.45, 10.15, 11.15 A. M., 12 M., 12.45, 1.30, 2.30 and 3.30 P. M.

September 8, 9, 10 and 11, 1891.

Round Trip Fare from Baltimore, including admission to the grounds. 50 cents. Children, half price.

—Extra Large and Attractive Exhibit of—

Horses, Cattle, Swine, Sheep. Poultry, Fruits and Domestic Manufactures.

Extraordinary.—At 11.30 A. M., Free Concert in the Grand Stand by the

GREAT SOUTHERN BAND,

of Baltimore, including solos by the leader, W. Paris Chambers.

Amusements and Diversions.

Every day, commencing at 12 o'clock. in front of the Grand Stand, and continuing one hour and a half,

A Performance of Minstrels, Acrobats, Slack Wire Walking, Boxing Matches and a Circus of Trained Dogs.

First Day—Tuesday, September 8,

SPECIAL RACES

—BY MEMBERS OF THE—

ELKRIDGE CLUB.

5 At 1.30 P. M. Each Day. 5
TRIALS OF SPEED.

Trotting, Pacing, Flat Races and Steeple Chases.

—Each Day at 4.30 P. M.,—

Ballon Ascension and Parachute Leap,

:-:BY:-:

"The Queen of the Air,"

GRACE SHANNON.

Most daring feat accomplished by a woman.

Leaping Head Foremost an Immense Height From the Ascending Balloon!

GOOD RESTAURANT and 50 Cent DINNER.

EXCURSION RATES ON ALL RAILROADS.

H. C. LONGNECKER, Secretary,
Towson, Md.

D. H. RICE, President.

"VEGETATOR."

SCARBOROUGH, HARFORD CO., MD.
August 17, 1891.

MESSRS. MILLER, LIPPINCOTT & CO.,

DEAR SIRS—I have used your "Vegetator" on wheat, corn, potatoes, tomatoes and canning corn, and it has given me satisfaction in every case. I have used large quantities of bone and other fertilizers during the last 20 years, but have never used anything that quite comes up to "Vegetator" in satisfactory results. I have the best set of timothy following its use after this year's wheat crop that I have ever seen. I shall use nothing else this fall and have already ordered from your agent, Mr. S. T. Moore, of Scarborough. Very respectfully yours,

JOHN B. SCARBOROUGH

For upward of 25 years the "Vegetator" has given satisfaction to the best agriculturists in the country. It continues to be sold in neighborhoods where it was originally introduced, and is everywhere considered a Reliable Fertilizer.

R. VINCENT, Jr. & SON,

Wholesale and Retail

Florist, Rose Grower

AND

SEEDSMAN,

COWENTON STATION, B. & O. R. R.

White Marsh P. O., Baltimore Co., Md.

—:o:—

Cabbage, Savoy, Borecole, Sweet Potato, Tomato Plants. Also, Flowering Plants of all descriptions constantly on hand and supplied at Low Figures.

SOUTHERN MARYLAND

Real - Estate - Agency,

1010 F STREET, N. W.,

WASHINGTON, D. C.

☞ WANTED FOR PURCHASERS, Farms, desirably located and reasonable in price. Write, giving full description and all particulars.

G. H. CALVERT & Co.

PENNSYLVANIA ROUTE

Formed by the Northern Central and Pennsylvania Railroads on the West, Northwest and Southwest to

PITTSBURG, CINCINNATI, LOUISVILLE, INDIANAPOLIS, CHICAGO, ST. LOUIS AND OTHER PROMINENT POINTS.

Baltimore and Potomac, and Alexandria and Fredericksburg Railways on the South to

WASHINGTON, RICHMOND, AND ALL POINTS IN THE ATLANTIC AND GULF STATES.

THE ONLY ALL-RAIL LINE WITH NO OMNIBUS TRANSFER AT WASHINGTON.

Northern Central and Philadelphia and Erie Railways on the North to

HARRISBURG, WILLIAMSPORT, ELMIRA, WATKINS GLEN, ROCHESTER, ERIE, BUFFALO, NIAGARA FALLS.

☞ Baggage called for and checked at the hotels and private residences through to destination. Sleeping and Parlor Car accomodations secured. Through tickets sold and information given at Company's office,

N. E. COR. BALTIMORE & CALVERT STS.,
AT DEPOT N. C. RAILWAY,
AT UNION DEPOT, CHARLES ST. STATION,
AND PENNSYLVANIA AVE. STATION.

CHAS. E. PUGH, *General Manager.*
J. R. WOOD, *Gen'l Passenger Agent, Penna. & N. C. R. R.*

A PRACTICAL EDUCATION.

THE MARYLAND AGRICULTURAL COLLEGE.,

PRINCE GEORGE'S COUNTY,

Eight miles from Washington, on B. & O.

Tuition Free to All.

For Catalogue and particulars,
Address:— HENRY E. ALVORD, President,
COLLEGE PARK, MD.

The courses of study are
MODERN, LIBERAL AND PRACTICAL
All expenses very low.

FOSTER

$45.25 BUGGIES
$5.25 HARNESS
Sold DIRECT to Consumers.
ILLUSTRATED CATALOGUES FREE.
THE FOSTER BUGGY & CART CO.

We sell as cheap to a Farmer who pays cash as we do to a wholesale dealer. *One Price to All* is our motto. We want to sell one Buggy and Harness in every county at once to show what bargains we have got. Our prices will surprise you. We are not in any pool or trust combination. SAVE MONEY by writing for catalogue.
Pike Bldg. CINCINNATI, O.

COLORA NURSERIES,

CECIL COUNTY, MD.

Grows Fruits, Flowers,
—AND—
Ornamental Trees,

And can supply you with anything in that line.

I have for the Fall of 1891, an especially fine lot of FRUIT TREES especially APPLES—Southern Winter Apples for Southern Planters; GRAPE VINES, Small Fruits, also a large collection of the best EVERGREEN TREES—Dwarf Arbor-Vitæ and Irish Juniper, Plants for Hedges & Screens. SHADE TREES for Street or Lawn. Roses and Greehouse Plants, etc.

Write for what you want direct to the grower. I have given many years especial attention to this business, and will use my best endeavors to serve you well.

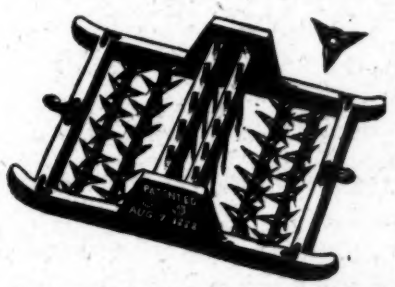
GEO. BALDERSTON, Colora, Md.

ALL GARDEN SUPPLIES.

ROBERT J. HALLIDAY,
Florist, Seedsman,
And Importer and Dealer in
GARDEN REQUISITES.
(Established in 1857.)
No. 8 S. Charles Street,
One door below Baltimore Street,

Where he will keep in great variety Decorative and Flowering Plants, Bulbs and Foots; Flower and Vegetable Seeds, Implements and Tools; Florists' Supplies, Pots and Vases, Rustic Work, Terra-Cotta Ware, Jardinieres, Liquid Plant Food, &c. *Several New Lines of Desirable Goods will be found added to his stock.*

THE WONDERFUL
Pulverizing Harrow!



It saves much labor, pulverizes the ground nicely, brings it up from down beneath to above, makes it loose, mixes it well and thus makes every bit apt for the reception of the dung and seed. Try it and be convinced. For the farmer there is a marker attached, and for the gardner, we add a frame with four markers, two feet apart. For further particulars, Price, etc., address

HENRY F. GRAETZEL,
Fullerton, Baltimore County, Md.

WM. FRASER.
Landscape Gardener and Florist,
BELAIR AVENUE,
BALTIMORE, MD.

Country Seats laid out, Gardens planted and kept, Trees planted and pruned; grading and sodding at lowest rates. Plans and estimates furnished. Orders by mail promply attended to.

R. J. BAKER. ESTABLISHED 1837. R. J. HOLLINGSWORTH.

WILL SELL LOW TO FARMERS FOR CASH.

HIGH GRADE FERTILIZERS,
For RYE, WHEAT and GRASS,
R. J. BAKER & CO.,
Manufacturers of
AMMONIATED BONE SUPER PHOSPHATES FOR WHEAT.

Pure Dissolved Raw Bone, Pure Fine Ground
Raw Bone, No. 1 Dissolved Raw Bone,
Dissolved S. C. Bone, Bird Guano and Potash

Factory, Locust Point. Office, 40 S. Charles St.
BALTIMORE.

1864 **SADLER'S BRYANT & STRATTON COLLEGE** BALT'O

FOUNDED IN 1864 by the present executive—27 YEARS of continuous and successful management—Increased annual attendance—Now occupying four buildings—Stands unrivaled in facilities for educating YOUNG MEN AND WOMEN for success in life. In deciding upon a school for their children, **PARENTS** should send them to **THE BEST**, because it pays. It may require the expenditure of a few dollars more at first, but it will prove the cheapest in the end. **CHEAP** tuition is very dear, because it means cheap teachers, cheap surroundings, inferior facilities, and offers NO opportunities for securing **POSITIONS** for its pupils and graduates. This Institution, owing to its **HIGH** standard of excellence, has placed in desirable positions more young men and women from Maryland, Virginia, North Carolina, South Carolina and Georgia, than all similar institutions combined. Catalogue and particulars mailed on application.

Address, **W. H. SADLER**, President, and Founder; or **F. A. SADLER**, Secretary.
BUSINESS COLLEGE, 6, 8, 10 & 12 N. Charles St., BALTIMORE, MD.

BALTIMORE NURSERIES.

Peach Trees a Specialty.
LARGEST STOCK IN THE COUNTRY.

1,000,000 Trees for Fall Trade. 500 Acres in Nursery Stock,
100 Acres in Orchards. 100 Acres in Small Fruits.

We offer to our customers an immense stock of Apples, Peaches, Cherries, Apricots, Grapes, &c., all the standard sorts. Also the new varieties of Fruits, Ornamental Trees, Shrubs, Roses, &c. Wholesale and retail. To dealers we can offer stock on favorable terms, and the best facilities for packing and shipping. Catalogues mailed on application. Agents waited. Write for terms.

FRANKLIN DAVIS & CO.,
Office—N. E. Corner Baltimore and Paca Streets, BALTIMORE, MD.

FRUIT AND ORNAMENTAL TREES.
Clairmount and Furley Hall Nurseries.

310 *ACRES.* *ESTABLISHED IN* 1828.

Peach budded on natural Tennessee Seedlings only. Large stock of Apple, Peach, Pear Cherry, Plum, and all other varieties of fruit trees, Grapes, Blackberries, Raspberries, Gooseberries, Currants, Asparagus Roots, Osage Orange and Evergreen Hedge Plants, Shade Trees and Evergreens of every variety. New and lately imported Flowering Shrubs, very handsome. Send for our Catalogue. **Wm. Corse & Sons,** P. O. Box 405, Baltimore, Md. Office, 200 N. Calvert Street, near Lexington.

COOLEY CREAMERS

ARE THE MOST POPULAR AMONG DAIRYMEN.
BECAUSE THEY MAKE MORE BUTTER.
BECAUSE THEY MAKE BETTER BUTTER.
BECAUSE THEY SAVE MOST LABOR.

Because the **PROCESS EXCELS** the animal heat **IMMEDIATELY**, and **PREVENTS** the development of **BACTERIA**, thus producing the **PUREST FLAVOR**, and accounting for the great number of Medals awarded viz.:

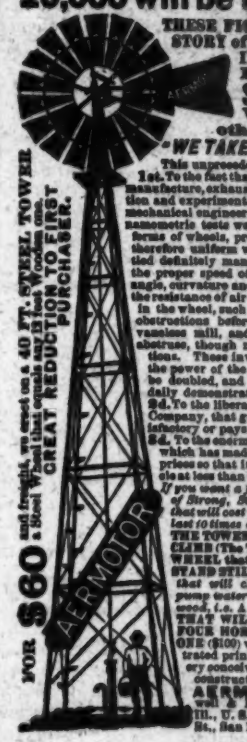
22 GOLD MEDALS

and **Silver Medals** and **First Premiums** too numerous to mention. In 4 styles and 12 sizes. Illustrated catalogue free. **VERMONT FARM MACHINE CO.,** BELLOWS FALLS, VT.
Manufacturers of and Dealers in **Churns, Butter Workers, Butter Printers** and **Carriers, Cheese Vats, Cream Vats, Engines, Boilers,** and all **Dairy and Creamery supplies.**

379 Varieties **FRUIT TREES** VINES, PLANTS, Etc.
Apple, Pear, Peach, Cherry, Plum, Quince, Strawberry, Raspberry, Blackberry, Currants, Grapes, Gooseberries, &c. Send for catalogue. J. S. COLLINS, Moorestown, N. J.

Go South. If you can't go, do the next best thing. Send 50 cts. in Stamps for the Monthly **Cornucopia** one year. You will get with it FREE a fine map of **Norfolk** and the great trucking section of the South. Send 2 cent stamp for sample copy.
A. JEFFERS, NORFOLK, VA.

45 sold in '88
2,288 sold in '89
6,268 sold in '90
20,000 will be sold in '91


FOR $80 and freight, we erect on a 40 FT. STEEL TOWER a Steel Wheel that equals any 12 foot Wooden one.
GREAT REDUCTION TO FIRST PURCHASER.
AERMOTOR

THESE FIGURES TELL THE STORY of the EVER-GROWING, EVER-GOING, EVERLASTING **Steel AERMOTOR** Where one goes others follow, and **"WE TAKE THE COUNTRY"**

This unprecedented success is due:
1st. To the fact that before commencing the manufacture, exhaustive scientific investigation and experiments were made by a skilled mechanical engineer, in which over 5,000 dynamometric tests were made on 61 different forms of wheels, propelled by artificial and therefore uniform wind, by which were settled definitely many questions relating to the proper speed of wheel, the best form, angle, curvature and amount of sail surface, the resistance of air to rotation, obstructions in the wheel, such as heavy wooden arms, obstructions before the wheel, as in the vaneless mill, and numerous other more obstruse, though not less important questions. These investigations proved that the power of the best wind wheels could be doubled, and the **AERMOTOR** daily demonstrates it has been done.
2d. To the liberal policy of the Aermotor Company, that guarantees its goods satisfactory or pays freight both ways, and
3d. To the enormous output of its factory which has made possible a reduction of prices so that it furnishes the best article at less than the poorest is sold for.
If you want a Iron Fixed Tower made of Strong, Self Steel, and a Wheel that will cost you less than wood, and last 10 times as long—IF YOU WANT THE TOWER YOU DON'T HAVE TO CLIMB (The Tilting Tower) and THE WHEEL that RUNS when all others STAND STILL, or if you want a wheel that will churn, grind, cut feed, pump water, turn grindstone & saw wood, i.e. A GEARED AERMOTOR THAT WILL DO THE WORK OF FOUR HORSES AT THE COST OF ONE ($100) write for copiously illustrated printed matter, showing every conceivable phase of Windmill construction and work, to the **AERMOTOR CO.**, Rockwell & Fillmore Sts., Chicago, Ill., U. S. A., or Branch, 12 Main St., San Francisco, Cal., U. S. A.

WANTED!
Experienced and Reliable Organizers
—FOR THE—
Benevolent Endowment Fraternity.

The perfection of fraternal organizations. Conducted by solid Business Men, familiar with all the existing Fraternal Societies.
Pays $500 and $1,000 at the end of 7 years.
" $12.50 and $25 sick benefits weekly.
" $166.66 in case of total disability under 3 years membership.
" $333.33 in case of total disability after 3 years membership.
" For a Home costing from $1,000 to $5,000 in seven years at a cost not exceeding ordinary monthly rental.

At the expiration of 4 years a member can draw three-tenths of the amount of certificate, and balance of the amount of certificate at the expiration of the seventh year. Certificate can be taken out every twelve months. Liberal Compensation. Address

L. JEFF MILBOURNE, Supreme Sec'y.
Baltimore, Md.

MORPHINE OPIUM NO CURE, NO FEE! Cured myself. DR. HAMILTON, Weiheredville, (Baltimore,) Md.

$75.00 to $250.00 A MONTH can be made working for us. Persons preferred who can furnish a horse and give their whole time to the business. Spare moments may be profitably employed also. A few vacancies in towns and cities. B. F. JOHNSON & CO., 1009 Main Street, Richmond, Va.

FRUIT EVAPORATOR
THE ZIMMERMAN
The Standard Machine
Different sizes and prices. Illustrated Catalogue free.
THE BLYMYER IRON WORKS CO., Cincinnati, O.

AGENTS WANTED to canvass for the sale of our home-grown NURSERY Stock. Most Liberal Terms. Unequaled Facilities. One of the *Largest, oldest-established* and *best-known Nurseries* in the country. Address—
W. & T. SMITH, GENEVA NURSERY.
Established in 1846. *Geneva, N. Y.*

PEACH TREES
3½ to 4 feet, and
APPLE TREES
5 to 6 feet,

FOR SALE in small and large quantities. Car load lots at very low prices.
Address GEORGE ACHELIS, West Chester, Chester Co., Pa.

Elliot's Parchment Butter Paper. Half Ream FREE!

To Dairy men and others who will use it, we will send half a ream, 8x11, free, if they will forward 30 cents to pay postage. Try the Best Butter Wrapper.

A. G. ELLIOT & CO., Paper Manufacturers, Philadelphia, Pa.

ESTABLISHED 1859.

H. GIBSON,

ALLEN STREET, - - LOCUST POINT, - - BALTIMORE.

Having placed the Latest Improved Machinery in my Factory, I am enabled to sell

DRAIN TILE (with or without collars) SEWER PIPE & FIRE BRICK

At Lowest Prices and equal to any in the Market.

ROSEBANK NURSERIES.

GOVANSTOWN, BALTIMORE COUNTY, MD.

Ornamental and Fruit Trees, Flowering Shrubs, Herbaceous Plants.

We invite the attention of the public to our select stock of the following: STANDARD AND DWARF PEARS—2, 3 and 4 years. APPLES—Standard and Dwarf. CHERRIES—Standard and Dwarf. APRICOTS, CRAB APPLES, MULBERRIES, GRAPEVINES, of the most popular kinds, together with other small fruits. Our collections of EVERGREENS, ORNAMENTAL TREES and SHRUBS are large, and embrace most of the rarest sorts.

Catalogues forwarded on application. Orders by mail promptly attended to.

All goods delivered in Baltimore free of charge.

W. D. BRACKENRIDGE.

G. W. LEHMAN, Ph. D., *Chemist and Metallurgist, Baltimore Copper Works.*

W. MAGER, *Formerly Chemist of N. C. Fertilizer Control Station.*

LEHMAN & MAGER,

CHEMISTS AND ASSAYERS,

111 S. Gay St., Baltimore, Md.

Analysis of all descriptions—Manures, Soils, Chemical Fertilizers, Ores of Gold and Silver by fire process), Copper, Lead, Manganese, etc. Clays, Coal, Limestone and other minerals. Water for steam, manufacturing and household use. Mineral waters and various products of art. Terms moderate.

Cook Stove DRIER

Handiest. Cheapest. Best. 12 sq. feet of Trays. Weight 25 pounds. Circulars Free. AGENTS AM. MFG. CO., Waynesboro, Pa. WANTED

NUT TREES. Chestnuts—Japan Mammoth and Giant, Parry's; Japan Walnuts; Japan Golden Russet, Idaho and Kiefer Pears; Eleagnus Longipes, Hardy Oranges, and other valuable novelties. Small Fruits, Grapes, &c. Fruit, Shade and Nut Trees, Ornamental Shrubs, Vines, &c. Illustrated Descriptive Catalogue Free.

WM. PARRY, Parry, New Jersey.

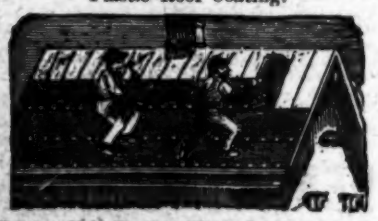
BALTIMORE COAL TAR AND MANUFACTURING COMPANY.

Manufacturers of and Dealers in

ROOFING MATERIALS

OF ALL KINDS.

Ready Roofing, Two-Ply and Three-Ply, Plastic Roof Coating.



Roofing Felt, Roofing Pitch, Gas Tar, Roofing Paint, Black Gloss Varnish.

Carbolic Acid and Carbolate of Lime.

The best disinfectants and preventatives against all diseases among horses and stock. Send for Circulars, Samples and Prices.

16 W. CAMDEN ST., BALTIMORE.

WANTED

WHEAT

—AND—

GRASS.

The Whole of Europe wants WHEAT, and the most of America wants GRASS in abundance. 12 leading Agriculturists have written us essays on "How to Grow Wheat and Grass." These, in pamphlet form, we will send Free on receipt of three 2-ct. stamps.

—Members of the

Farmers' Alliance

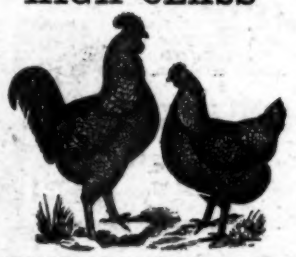
and Farmers' Clubs can have their Fertilizers made specially to order, at reduced prices.

W. S. POWELL & CO.,

Baltimore, Md.,

CHEMICAL FERTILIZER MANUFACTURERS, AND IMPORTERS OF AGRICULTURAL CHEMICALS.

HIGH CLASS



PLYMOUTH ROCK FOWLS

AND EGGS IN SEASON.

Bubach No. 5 Strawberry Plants $4.00 per M.; other sorts, including Michel's Early and Hoffman; also Raspberry and Blackberry Plants. Choice Anne Arundel Canteloupe Seed.

Address R. S. OLER,

HARMAN'S, A. A. Co., Md.

SLINGLUFF & CO.

Office, 300 W. Fayette St. Works, Foot Leadenhall St.

BALTIMORE.

Manufacturers and Manipulators of

PHOSPHATES.

We are now offering to the trade the following well known Brands of Goods, which we guarantee fully up to the standard:

SLINGLUFF'S DISSOLVED GROUND BONE,
Containing 3 per cent. of Ammonia.

SLINGLUFF'S DISSOLVED SOUTH AMERICAN BONE ASH,
Containing 40 to 44 per cent. Soluble Bone Phosphate.

SLINGLUFF'S DISSOLVED SOUTH CAROLINA PHOSPHATE,
Containing 28 to 32 per cent. Soluble Bone Phosphate.

To meet the demand for a High Grade Fertilizer, we are offering

SLINGLUFF'S NATIVE SUPER-PHOSPHATE,
Prepared entirely from Animal Bone, Highly Ammoniated. Also

SLINGLUFF'S AMMONIATED SUPER-PHOSPHATE,
This we can confidently recommend as one of the Best Fertilizers in the market at any price.

LOW PRICES * BEST WORK

ESTABLISHED 1855.

GEORGE O. STEVENS,

WINDOW SASHES, 115 & 117 LIGHT ST., Baltimore, Md.

BLINDS & DOORS

Bracket Shelves, Wooden Mantels, Mouldings, Window and Door Frames, Hotbed Sash, Sash Weights and Cord, Balusters, Newel Posts and Stair Rails, Brackets, Cornice and Sawed Work, Church Windows and Pews, Stained and other Fancy Glass. LIME, LUMBER and HAIR. If you want to BUILD CHEAPLY, send your orders to

GEORGE O. STEVENS.

SEND FOR A CATALOGUE

GEO. F. SLOAN & BRO.

Lumber, Doors, Sash, Bricks, &c.

IN LOTS TO SUIT.

414 Light Street Wharf,

BALTIMORE.

ESTABLISHED 1811.

A. E. WARNER,

MANUFACTURER OF

Silverware and Rich Jewelry,

ENGLISH, SWISS AND AMERICAN WATCHES OF THE BEST MAKERS.

IMPORTER AND DEALER IN

DIAMONDS, FINE WATCHES, SILVER-PLATED WARE, TABLE CUTLERY, &c.
WEDDING PRESENTS.

Premiums for Agricultural Fairs, Fine Bronzes, Opera Glasses, Shell Jewelry, &c. All of which are offered at Greatly Reduced Prices.

No. 131 East Baltimore Street, near Calvert.

EASTERN SHORE NURSERIES.

An extra fine assortment of the very best and most profitable varieties of Peaches. TREES ABSOLUTELY FREE FROM ALL TAINT OF DISEASE, AND STRICTLY TRUE TO NAME. Apple trees, a splendid stock, comprising the best known of early summer, market varieties, as well as the very CREAM of most profitable and desirable keeping kinds. Also Pear (Standard and Dwarf), Cherry, Apricot, Quince, with the finest and most complete assortment of Plum Trees in the country. Shade and Ornamental Trees, Grape Vines, Small Fruits of all kinds, Flowering Shrubbery, &c., &c.

New price-list free to all applicants. Correspondence solicited. Address

J. W. KERR,

DENTON, CAROLINE COUNTY, MARYLAND.